Data Evaluation Report on the terrestrial field dissipation of tebuconazole

PMRA Submission Number {.....} EPA MRID Number 45359901

Data Requirement: PMRA Data Code:
EPA DP Barcode: D274126
OECD Data Point:
EPA Guideline: Subdivision N, 164-1

Test material: Tebuconazole

End Use Product name: LYNX 25DF **Concentration of a.i.:** 25%

Formulation type: Dry flowable

Active ingredient
Common name: Tebuconazole
Chemical name:
IUPAC: α-[2-(4-chlorophenyl)ethyl]-α-(1,1-dimethyl)-1*H*-1,2,4-triazole-1-ethanol
CAS name: Tebuconazole
CAS No: 107534-96-3
Synonyms: Chlorophenylethyl-α-(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol; Folicur
SMILES string: **[C6 H22 Cl N3 O]**

Primary Reviewer: Andrew Glucksman **Signature:**
Dynamac Corporation **Date:**

QC Reviewer: Joan Harlin **Signature:**
Dynamac Corporation **Date:**

Secondary Reviewer: Iwona Mahes **Signature:**
EPA **Date:** 3/31/09

Company Code: [for PMRA]
Active Code: [for PMRA]
Use Site Category: [for PMRA]
EPA PC Code: 128997

CITATION: Wood, S.E., Yuetter, G.L., and Mattern, G.C. 1997. Terrestrial field dissipation of tebuconazole (LYNX 25DF) on New York turf, 1996. Unpublished study performed by A.C.D.S. Research Inc., Lyons, NY, and Bayer Corporation, Stilwell, KS; and sponsored by Bayer Corporation, Kansas City, MO. A.C.D.S. Research Study Number AR96346. Bayer Laboratory Study Number FR022703. Bayer Report Number 107807. Study initiated on May 22, 1996 and completed on December 10, 1997.

EXECUTIVE SUMMARY:

The soil dissipation of tebuconazole under U.S. field conditions was conducted in turf plots at one site in Glenmark, New York. The Ecoregion was not provided. The experiment was carried out in accordance with the U.S. EPA Pesticide Assessment Guidelines Subdivision N, 164-1 and in compliance with the U.S. EPA FIFRA (40 CFR, Part 160) GLP Standards. LYNX 25DF Fungicide (25% a.i.) was surface broadcasted three times at 1.52 kg a.i./ha and once at 0.76 kg a.i./ha (applications separated by one-month intervals) in five 4.5 x 22.5 m (15 x 75 foot) plots using single applications. The total applied rate corresponds to 100% of the proposed label rate for LYNX 25DF Fungicide. Rainfall was supplemented with irrigation and exceeded the historical average rainfall by 216%. The treated plots were 1.5 m (5 feet) apart and the control plot was 37 m (120 feet) away from the treated plots.

The application rate was verified using application monitoring pads and soil pans that were randomly placed in each of the five replicate treated plot areas. There was 92% and 88.9% recovery in the pads and pans based on the field application calculations, respectively. Field spiking of the samples was done by fortifying control soil with tebuconazole at 1 ppm . There was 108% recovery of the applied tebuconazole in field spiked samples.

Soil samples were taken at -1, immediately following each application, and at 7, 14, 28, 60, 90, and 120 days posttreatment (relative to the final application) to a depth of 0-60 cm (0-24 inches). The soil samples were extracted with methanol:water (7:3, v:v) and analyzed for tebuconazole using LC/MS/MS. Samples were not analyzed for transformation products of tebuconazole. The LOD and LOQ for parent in soil were 0.01 and <0.01 ppm, respectively.

The measured zero-time concentration (following the first treatment) was 1.00 mg a.i./kg soil, which was 63% of the total applied rate (1.6 mg a.i./kg) for the first application. In the 0- to 7.5-cm (0-3 inch) soil layer, tebuconazole was 1.69 and 2.57 mg a.i./kg soil following the second and third applications, respectively. Immediately following the final application (0.78 mg a.i/kg), tebuconazole was 2.65 mg a.i./kg, decreased to 2.51-2.54 mg a.i/kg from 7 to 14 days, increased to 3.02 mg a.i/kg by 28 and 60 days, and decreased to 2.49 by 120 days posttreatment in the 0- to 7.5-cm soil layer. The concentration of tebuconazole in the 7.5- to 15-cm (3-6 inch) depth was ≤0.41 mg a.i/kg at all sampling intervals. The concentration of tebuconazole below the 15-cm depth was negligible at all sampling times.

Mass accounting was not reported. The test material was not radiolabeled, and the soil was analyzed only for tebuconazole.

Under field conditions at the test site, tebuconazole had a 50% dissipation time of 305 days, which was determined beyond the scope of the observed data. At the end of the 120-day period (relative to the final application), the total carryover of residues of tebuconazole was 46% of the total applied amount.

The major route of dissipation of tebuconazole under terrestrial field conditions at the test site could not be determined from the data provided in this study.

RESULTS SYNOPSIS

Location/soil type: Glenmark, New York/loamy sand
Half-life (DT50): 305 days
DT90: Beyond the scope of the observed data
Major transformation products detected: Transformation products were not analyzed.
Dissipation routes: Routes of dissipation could not be determined from the data provided.

Study Acceptability: This study is deemed supplemental since soil samples were not analyzed for transformation products of tebuconazole.

I. MATERIALS AND METHODS

GUIDELINE FOLLOWED: The study was conducted according to U.S. EPA Pesticide Assessment Guidelines Subdivision N, 164-1. The deviation from EPA Subdivision N 164-1 is:

The patterns of formation and decline of the degradates of tebuconazole were not determined. This deviation does not affect the validity of the study.

COMPLIANCE: This study was conducted in compliance with U.S. EPA FIFRA (40 CFR Part 160) Good Laboratory Practice standards. Signed and dated GLP Compliance, Quality Assurance, and Data Confidentiality statements were provided.

A. MATERIALS:

1. Test Material Tebuconazole

Description: Dry flowable

Storage conditions of test chemicals: Ambient temperature

Physico-chemical properties of the active ingredients: Tebuconazole

Parameter	Values	Comments
Water solubility	32 mg/mL at 20°C	Reference 1
Vapour pressure/volatility	1.3×10^{-8} mbar Hg at 20°C 3.1×10^{-8} mbar Hg at 25°C	Reference 2
UV absorption	86% tebuconazole remaining in sandy loam soil (pH 4.5) incubated for 34 days; Soil photodegradation study	Reference 5
pKa	Not provided	
K_{ow}/log K_{ow}	5000 at 20°C	Reference 3
Stability of Compound at room temperature	Not provided	

Data obtained from p. 11, in the study report.

2. Test site: The test site was established in Glenmark, Wayne County, New York (Figures 2-5, pp. 36-39). The test plot had previously been treated with Round Up (2 qt/acre) and 2,4-D (2 qt/acre; Table 1, p. 23).

Table 1: Geographic location, site description and climatic data at the study site

Details		
Geographic coordinates	Latitude	Not provided
	Longitude	Not provided
	Province/State	New York
	Country	US
	Ecoregion	Not provided
	Canadian Field Trial Region	Not provided
Slope Gradient		1.3%
Depth to ground water (m)		>3 m (>10 feet)
Distance from weather station used for climatic measurements		5-20 miles
Indicate whether the meteorological conditions before starting or during the study were within 30 year normal levels (Yes/No). If no, provide details.		No. Total rainfall during the study was 56 inches, equal to 210% of the 30-year average (26.66 inches).
Other details, if any		Rainfall during the study period was abnormally high (Table 5, p. 27)

Data from pp. 13, 16, Table 5, p. 27, in the study report.

Table 2: Site usage and management history for the previous three years.

Use	**Year**	
Crops grown	Previous year	Turf
	2 years previous	Fescue/bluegrass mix
	3 years previous	Apple orchard
Pesticides used	Previous year	2,4-D (2 qt/acre)
	2 years previous	Roundup (2 qt/acre)
	3 years previous	Asana, Rubigan, Penncozeb, Omite, Captan, Penncap, Vydate, Sevin, Thiodan, Guthion, Penncap, Topsin (rates not provided)
Fertilizers used	Previous year	None

Use	Year	
	2 years previous	15-15-15 (400 lb/acre)
	3 years previous	None
Cultivation methods, if provided (eg., Tillage)	Previous year	Turf mowed
	2 years previous	Trees removed, plot cultimulched once
	3 years previous	Not provided
Other details if any	Previous year	Not provided
	2 years previous	Not provided
	3 years previous	Not provided

Data obtained from Table 1, p. 23, in the study report.

3. Soils:

Table 3: Properties of the soil from the test site

Property	Depth			
	0-15 cm	**15-30 cm**	**30-45 cm**	**45-60 cm**
Textural classification	Loamy sand	Sand	Sand	Loamy sand
% sand	78.8	88.8	88.8	82.8
% silt	15.6	7.6	9.6	15.6
% clay	5.6	3.6	1.6	1.6
pH (1:1 soil:water or other)	6.4	5.7	5.5	5.5
Total organic matter (%)	3.53	1.55	0.7	0.43
CEC (meq/100 g)	6.67	4.26	2.97	1.91
Bulk density (g/cm3)	1.29	1.42	1.49	1.52
Moisture at 1/3 atm (%)	11.04	7.38	5.08	4.83
Taxonomic classification (e.g., ferro-humic podzol)	Mixed, mesic Typic Udipsamments			
Soil mapping unit	Not provided	Not provided	Not provided	Not provided
Others	US Soil Conservation Series name: Oakville loamy fine sand			

Data obtained from Table 2, p. 24, of the study report.

B. EXPERIMENTAL DESIGN:

1. Experimental design:

Table 4: Experimental design.

Details		
Duration of study		May 31-December 16, 1996
Uncropped (bare) or cropped		Turf
Control used (Yes/No)		Yes
No. of replications	Control	One
	Treatments	Five
Plot size (L x W m)	Control	4.5 x 12 m (15 x 40 feet)
	Treatment	4.5 x 22.5 m (15 x 75 feet)
Distance between control plot and treated plot		36 m (120 feet)
Distance between treated plots		1.5 m (5 feet)
Application rate(s) used (g a.i/ha)		5335 g a.i./ha (4.76 lbs a.i./acre)
Was the maximum label rate per ha used in study? (Yes/No)		Yes
Number of applications		Four
Application Date(s) (dd mm yyyy)		31/05/1996 28/06/1996 26/07/1996 23/08/1996
For multiple applications, application rate at Day 0 and at each application time (mg a.i./kg soil)		0.79 mg a.i./kg (1.36 lbs a.i./acre; applications 1-3) 0.39 mg a.i./kg (0.68 lbs a.i./acre; application 4)
Application method (eg., spraying, broadcast etc.)		Spraying
Type of spray equipment, if used		Tractor mounted boom sprayer with T-Jet, flat fan nozzles spaced 20-inches apart (number of nozzles not provided)
Total volume of spray solution applied/plot **OR** total amount broadcasted/plot		Not provided
Identification and volume of carrier (e.g., water), if used		Not provided
Name and concentration of co-solvents,		

Details		
adjuvants and/or surfactants, if used		None used
Indicate whether the following monthly reports were submitted: Average minimum and maximum precipitation Average minimum and maximum air temperature Average minimum and maximum soil temperature Average annual frost-free periods		 Yes Yes Yes No
Indicate whether the Pan evaporation data were submitted		No
Meteorological conditions during application	Cloud cover	Not provided
	Temperature (°C)	14.4°C (58°F) 16.6°C (62°F) 18.3°C (65°F) 23.8°C (75°F)
	Humidity	58, 83, 90, 81%
	Sunlight (hr)	Not provided
Pesticides used during study: name of product/a.i concentration: amount applied: application method:		None used
Supplemental irrigation used (Yes/No) If yes, provide the following details: No. of irrigation: Interval between irrigation: Amount of water added each time: Method of irrigation:		Yes 2 Not provided 2 and 1.7 cm (0.80 and 0.68 inches) Not provided
Indicate whether water received through rainfall + irrigation equals the 30 year average rainfall (Yes/No)		No
Were the application concentrations verified? (Briefly describe in Section 2*, if used)		Yes
Were field spikes used? (Briefly describe in Section 3¶, if used)		Yes

Details	
Good agricultural practices followed (Yes or No)	Could not be determined from information provided
Indicate if any abnormal climatic events occurred during the study (eg., drought, heavy rainfall, flooding, storm etc.)	Abnormally high rainfall occurred during the study period.
If cropped plots are used, provide the following details: Plant - Common name/variety: Details of planting: Crop maintenance (eg., fertilizers used):	 Kentucky bluegrass/creeping fescue mixture Planted October, 1994 15-15-15 (400 lb/acre) applied 1994 Grass mowed to maintain 2-3 inch height; clippings left on test plot
Volatilization included in the study (Yes/No) (if included, describe in Section 4[§])	No
Leaching included in the study (Yes/No) (if included, describe in Section 5[ι])	Yes
Run off included in the study (Yes/No) (if included, describe in Section 6[¥])	No

Data obtained from p. 14, Table 3-5, pp. 25-27, Figure 4-5, pp. 38-39, in the study report.

2. Application Verification: Six application monitoring pads were randomly placed in each of the five replicate treated plots prior to application (p. 14). Following application, the pads were collected and transported to the analytical laboratory where they were composited (six pads per composite) and extracted by shaking with acetonitrile. Extracts were analyzed by LC/MS/MS. In addition to soil pads, soil pans (0.25 x 12 in) containing 500 g control soil were placed in each subplot. Following application, the soil was collected, placed in plastic bags, and shipped frozen to the analytical laboratory where they homogenized and extracted with methanol:water (4:1, v:v). Extracts were analyzed by HPLC.

3. Field Spiking: Soil samples (plot and depth not provided) were fortified with tebuconazole at 1 ppm at 4, 28, and 120 days posttreatment (relative to the final application; pp. 15, 22, Table 9, p. 31). The fortified samples were frozen and shipped to the analytical laboratory in the same manner as test samples.

4. Volatilization: Volatilization was not studied.

5. Leaching: At each sampling interval, 15 soil cores were collected to a depth of 60 cm (approximately 24 inches).

6. Run off: Run off was not measured.

7. Supplementary Study: A storage stability study was conducted for this study. Concurrent recoveries were determined for LC/MS/MS analysis. A method validation study was conducted.

8. Sampling:
Table 6: Soil sampling.

Details	
Method of sampling (random or systematic)	Random
Sampling intervals	-1, immediately following each application, and 7, 14, 28, 60, 90, and 120 days posttreatment (relative to the final application)
Method of soil collection (eg., cores)	Cores
Sampling depth	60-cm (24 inches)
Number of cores collected per plot	15 treated and 3 control cores per interval
Number of segments per core	2
Length of soil segments	15-cm, 60-cm (6-inches, 24-inches)
Core diameter (Provide details if more than one width)	5.7 cm (2.25 inches), 0-15 cm depth 4.4 cm (1.75 inches), 15-60 cm depth
Method of sample processing, if any	The 0-15 cm (0-6 inch) core segments were sectioned into 0-7.5 cm (0-3 inch) and 7.5-15 cm (3-6 inch) segments, and the 15-60 cm (6-24 inch) core segments were sectioned into 15-30 cm (6-12 inch), 30-45 cm (12-18 inch), and 45-60 cm (18-24 inch) segments. The segments were composited by depth.
Storage conditions	Frozen
Storage length (days)	98-295 days

Data obtained from pp. 16, 18, Table 3, p. 25, in the study report.

9. Analytical Procedures: Soil samples (20 g) were extracted by refluxing with methanol:water (7:3, v:v) for 1 hour (Appendix 3, p. 59). The extracts were removed and brought to 50 mL with solvent (methanol:water). An aliquot (1.5 mL) of the extract was filtered (0.45 µm) and analyzed for tebuconazole by LC/MS/MS. The LOQ and LOD were 0.01 and <0.01 ppm, respectively (Appendix 3, p. 64).

II. RESULTS AND DISCUSSION

1. APPLICATION MONITORS: The recoveries in the field application monitoring pads were 71-110% (92%) of the nominal concentration based on the field application calculations (p. 19,

Table 7, p. 29). The recoveries in the field application soil pans were 63.6-106.0% (88.9%) of the nominal concentration based on the field application calculations (Table 8, p. 30).

2. RECOVERY FROM FIELD SPIKES: The recovery from the field spiked samples fortified at 1 ppm was 108% of the applied concentration (p. 19, Table 9, p. 31).

3. MASS ACCOUNTING: There was no mass accounting. The soil was analyzed only for tebuconazole.

Table 7. Concentration of tebuconazole residues expressed as ppm at the test site.

Com-pound	Soil depth (cm)	Sampling times (days posttreatment relative to the fourth application)						
		0	7	14	28	60	90	120
Tebuconazole	0-7.5 cm (0-3 inches)	2.59	2.32	2.68	3.69	2.59	2.82	2.26
	0-7.5 cm (0-3 inches)	2.87	2.98	2.05	2.74	3.12	2.16	2.72
	0-7.5 cm (0-3 inches)	2.5	2.32	2.81	2.62	3.36	2.9	2.48
	Average	2.65	2.54	2.51	3.02	3.02	2.63	2.49
	7.5-15 cm (3-6 inches)	0.15	0.04	0.09	0.05	0.01	0.03	0.03
	7.5-15 cm (3-6 inches)	0.15	0.12	0.06	0.02	0.03	0.01	0.02
	7.5-15 cm (3-6 inches)	0.28	0.06	0.09	0.03	0.03	0.02	0.02
	Average	0.19	0.07	0.08	0.03	0.02	0.02	0.02
	15-30 cm (6-12 inches)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	15-30 cm (6-12 inches)	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	15-30 cm (6-12 inches)	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Average	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Tansfor-mation products	Not analyzed.							
Total extract-able residues	Not analyzed.							
Total recovery	Not determined.							

Data obtained from Table 10, pp. 32-33, in the study report.

4. PARENT COMPOUND: At the test site, the measured zero-time concentration (following the first application) was 1.00 mg a.i./kg soil (0-7.5 cm soil layer), which was 64% of the total

applied rate (1.6 mg a.i./kg) for the first application. In the 0- to 7.5-cm soil layer, tebuconazole was 1.69 and 2.57 mg a.i./kg soil following the second and third applications, respectively. Immediately following the final application (0.78 mg a.i/kg rate), tebuconazole was 2.65 mg a.i./kg, decreased to 2.51-2.54 mg a.i/kg from 7 to 14 days, increased to 3.02 mg a.i/kg by 28 days, and decreased to 2.49 by 120 days posttreatment in the 0- to 7.5-cm soil layer (Table 10, pp. 32-33). The concentration of tebuconazole in the 7.5- to 15-cm depth was ≤0.41 mg a.i/kg at all sampling intervals. The concentration of tebuconazole below the 15-cm depth was negligible at all sampling times.

The 50% dissipation time of tebuconazole in soil under terrestrial field conditions using LOTUS 123 (first-order equation) was: (p. 41; Figure 10, p. 44)

Glenmark, NY site DT50 = 305 days DT90 = Not provided

The dissipation pattern of tebuconazole at the field site was slow and variable. The maximum concentration of tebuconazole, 3.02 mg a.i./kg soil, occurred 28 days following the final application and decreased slowly thereafter; 46% of the total applied amount (5.5 mg a.i./kg soil total for all four applications) was present at the end of the study period.

5. TRANSFORMATION PRODUCTS: The soil was not analyzed for the transformation products of tebuconazole.

Table 8: Chemical names and CAS numbers for the transformation products of [test material].

Applicant's Code Name	CAS Number	CAS and/or IUPAC Chemical Name(s)	Chemical formula	Molecular weight	SMILES string
		Transformation products not determined.			

6. EXTRACTABLE AND NON-EXTRACTABLE RESIDUES: The soil was analyzed only for tebuconazole.

Table 9: Dissipation routes of tebuconazole under field conditions.

Route of dissipation	% of applied amount (at the end of study period)
Accumulation (residues) in soil/ carry over	46% (based on 5.5 mg a.i./kg total nominal application rate for all four applications)
Transformation (% of transformation products)	Transformation products were not determined
Leaching, if measured	Maximum of 0.41 ppm following third application, equivalent to 8.8% of the applied amount (based on three applications of 1.5 mg a.i./kg/application)
Volatilization, if measured	Volatiles were not measured
Plant uptake, if measured	Plant uptake was not measured
Run off, if measured	Runoff was not measured
Total	46%

7. VOLATILIZATION: Volatilization was not measured.

8. PLANT UPTAKE: Plant uptake was not measured. Grass clippings from mowing were not removed from the plot and were included in the 0- to 7.5-cm soil sampling depth.

9. LEACHING: In the 7.5- to 15-cm (3-6 inch) depth, the concentration of tebuconazole averaged ≤0.41 mg a.i/kg at all sampling intervals (Table 10, pp. 32-33). The concentration of tebuconazole below the 15-cm depth was negligible at all sampling times.

10. RUN OFF: Runoff was not measured.

11. RESIDUE CARRYOVER: Residue carryover could not be determined because the soil was not analyzed for transformation products or total residues. The DT50 value was 305 days; after 120 days following the final application, 46% of the applied tebuconazole was detected.

12. SUPPLEMENTARY STUDY RESULTS: In a storage stability study, tebuconazole was stable (≤6.7% loss) in soil samples that were stored frozen for up to 295 days (tabular data not provided; p. 18). Concurrent recoveries for soils fortified with tebuconazole at 0.01 ppm were 90-120% (p. 19, Appendix 6, pp. 77-90). Method validation recoveries for soils fortified with tebuconazole at 0.01 and 0.1 ppm were 103.6-111.8% and 93.2-96.0%, respectively (p. 12).

III. STUDY DEFICIENCIES: None of the study deficiencies are of sufficient concern to cause the study to be judged scientifically invalid. Although the soil was analyzed only for tebuconazole, no transformation products were detected at >10% of the applied in the aerobic soil metabolism study (Lee, S.G.K., Hanna-Bey, L.A. "The Metabolism of FOLICUR in Soil", Bayer Report No. 943369, 1987). The study authors stated that in previously conducted field studies in Indiana, Kansas, Florida, Texas, California, Minnesota, Georgia, and Wisconsin, residues of tebuconazole were primarily in the 0- to 30-cm depth. The reviewer could not

confirm whether degradates were determined in the previously conducted field studies. The study does provide useful supplemental information on the dissipation of tebuconazole under field conditions.

IV. REVIEWER'S COMMENTS:

1. Pan evaporation data were not reported. Such data are necessary to determine water balances and to assess whether sufficient moisture was present to facilitate leaching of the test substance.

2. Samples were not collected immediately prior to each application. Therefore, the reviewer was unable to determine the percentage of tebuconazole that was recovered following each application.

3. The registrant-calculated half-life (first-order regression analysis) of tebuconazole (305 days) was calculated beyond the scope of the observed data. However, the registrant-calculated 50% dissipation time was similar to the reviewer calculated half-life/50% dissipation time (301.4 days).

4. The reviewer converted the application rate from "lbs a.i./A" to "mg a.i./kg" based on a 7.5-cm deep soil layer and 1.29 g/cm^3 bulk density in the 0-7.5 cm soil layer (Table 2, p. 24).

V. REFERENCES:

5. Krohn, J. "Water Solubility of Tebuconazole (HWG1608)", Bayer Report No. 98011, 1988.

6. Weber, D.P. "Vapor Pressure Curve of Tebuconazole", Bayer Report No. 98009, 1988.

7. Krohn, J. "Octanol/Water Partition Coefficient of Tebuconazole (HWG1608)", Bayer Report No. 98012, 1988.

8. Coffman, M.W., Sietsma, W.K. "Hydrolysis Study of BAY HWG 1608 in Sterile Aqueous Buffered Solutions", Bayer Report No. 88726, 1984.

9. Coody, P.N. "Photodecomposition of FOLICUR (HWG 1608) in Soil and Water", Bayer Report No. 94091, 1987.

10. Fritz, R. "Adsorption/Desorption of FOLICUR (HWG 1608) on Soil", Bayer Report No. 100101, 1988.

11. Smyser, B.P., Lenz, C.A. "Leaching of Aged Residues of FOLICUR-^{14}C", Bayer Report No. 94801, 1987.

12. Lee, S.G.K., Hanna-Bey, L.A. "The Metabolism of FOLICUR in Soil", Bayer Report No. 94369, 1987.

13. Pither, K.M. "Dissipation of Tebuconazole in Field Soil", Bayer Report No. 96778, 1988.

14. Dehart, B.A., Valadez, S.K., Cain, K.S. "Field Dissipation of Tebuconazole on California Soil", Bayer Report No. 103242, 1993.

15. Dehart, B.A., Valadez, S.K., Cain, K.S. "Field Dissipation of Tebuconazole on Minnesota Soil", Bayer Report No. 10320, 1993.

16. Dehart, B.A., Valadez, S.K., Cain, K.S. "Field Dissipation of Tebuconazole on Minnesota Turf", Bayer Report No. 103241, 1993.

17. Dehart, B.A., Valadez, S.K., Lam, C.V. "Terrestrial Field Dissipation of Tebuconazole on Georgia Soil, 1991", Bayer Report No. 106446, 1991.

18. Dehart, B.A., Valadez, S.K., Cain, K.S. "Terrestrial Field Dissipation of Tebuconazole on North Carolina Soil, 1991", Bayer Report No. 106236, 1994.

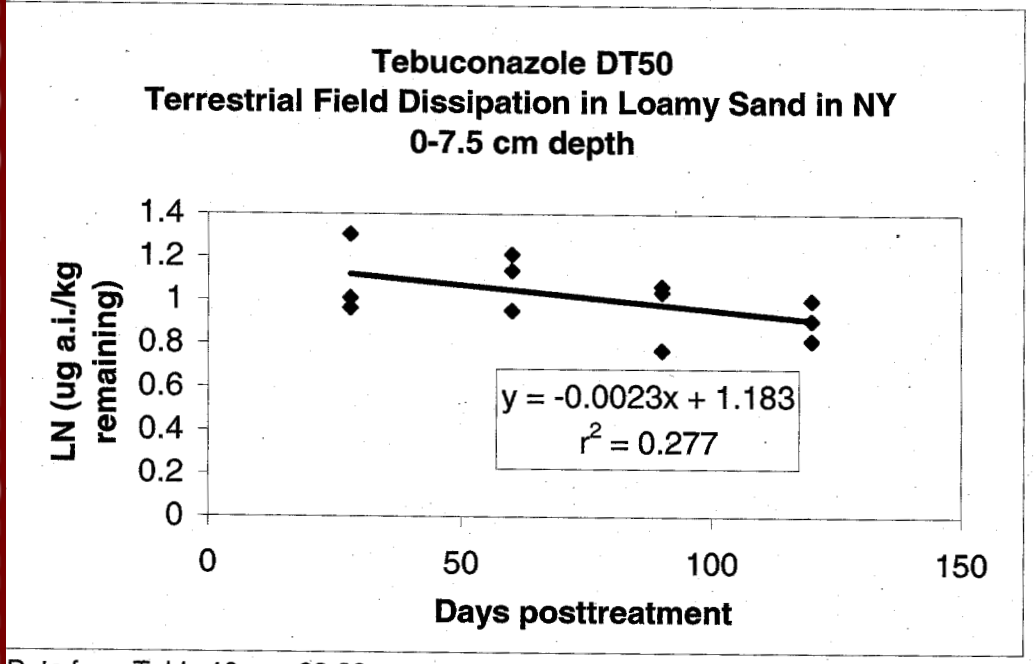
19. McKelvey, S.B., Mattern, G.C., Lam, C.V., Dehart, B.A. "Terrestrial Field Dissipation of Tebuconazole on Fresno, California Soil, 1992", Bayer Report No. 106956, 1995.

20. McKelvey, S.B., Mattern, G.C., Lam, C.V., Green, D.L., Dehart, B.A., "Terrestrial Field Dissipation of Tebuconazole on Watsonville, California Soil, 1992", Bayer Report No. 106957, 1996.

Chemical	Tebuconazole
PC Code	128997
CAS No.	107534-96-3
MRID	45359901

Reviewer-calculated 50% dissipation time = 301.4 days

Days posttreatment (relative to the maximum soil concentration at 28 days following the fourth application)	ppm	LN (ppm)
28	3.69	1.305626
28	2.74	1.007958
28	2.62	0.963174
60	2.59	0.951658
60	3.12	1.137833
60	3.36	1.211941
90	2.82	1.036737
90	2.16	0.770108
90	2.9	1.064711
120	2.26	0.815365
120	2.72	1.000632
120	2.48	0.908259



Data from Table 10, pp. 32-33