

US EPA ARCHIVE DOCUMENT

Shaughnessy Number: 128997
Date out of EFGWB: MAY 25 1990

To: S. Lewis/J. Fairfax
Product Manager 21
Registration Division (H7505C)

From: Emil Regelman, Supervisory Chemist
Environmental Fate Review Section #2
Environmental Fate and Ground Water Branch
Environmental Fate and Effects Division (H7507C)

Thru: Hank Jacoby, Chief
Environmental Fate and Ground Water Branch
Environmental Fate and Effects Division (H7507C)

Attached, please find the EFGWB review of...

Reg./File #: 3125-GIG, -GIU, -GOU, -GII, -GIE, -GOE, -GOG

Chemical Name: te(r)buconazole

Type Product: fungicide

Product Name: various

Company Name: Bayer AG

Purpose: response to EFGWB review of aerobic and anaerobic soil studies

Date Received: 02/21/90

Total Reviewing Time (days): 1

Action Code: 101, 116

EFGWB#(s): 90-0401, -0402, -0403, -0404,
-0405, -0406, -0407

Deferrals to:

Ecological Effects Branch, EFED

Dietary Exposure Branch, HED

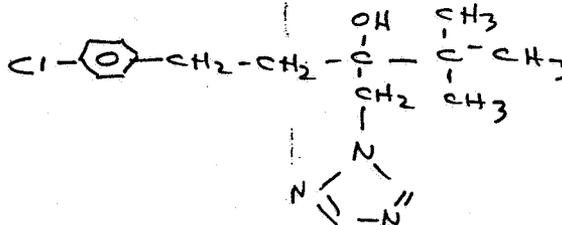
Toxicology Branch, HED

Non-Dietary Exposure Branch, HED

Science Integration and Policy Staff, EFED

1. CHEMICAL:

chemical name: a-[2-(4-Chlorophenyl)ethyl]-a-(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol
common name: te[r]buconazole, folicur
trade name: Elite
structure:



CAS #: unknown
Shaughnessy #: 128997

2. TEST MATERIAL: n.a.

3. STUDY/ACTION TYPE: reply to EFGWB review of soil metabolism studies

4. STUDY IDENTIFICATION: n.a.

5. REVIEWED BY:

Typed Name: E. Brinson Conerly
Title: Chemist, Review Section 2
Organization: EFGWB/EFED/OPP

E. B. Conerly 5/16/90

6. APPROVED BY:

Typed Name: Emil Regelman
Title: Supervisory Chemist, Review Section 2
Organization: EFGWB/EFED/OPP

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7. CONCLUSIONS: -

There are no new environmental fate data contained in this submission. The applicants' discussion re acceptability of previously submitted aerobic and anaerobic soil studies is valid. In the absence of specific concerns no further data are required at this time. Most of the requirements are fulfilled and indicate a persistent but not mobile compound.

8. RECOMMENDATIONS:

The remaining required data and information should be submitted as soon as possible.

9. BACKGROUND:

There are no new environmental fate data in this submission. Available data indicate persistence but low soil mobility. Some plant uptake occurs. An EFGWB science chapter is due to be issued in July 1990 which will contain updated information on mobility, rotational crop accumulation and fish bioaccumulation.

The status of data requirements is as follows:

- hydrolysis -- fulfilled as of 6/9/89, stable at pH 5, 7, and 9 -- no hydrolysis after 28 days incubation
- photolysis in water -- fulfilled as of 6/9/89 -- no photodegradation detected; extrapolated $t_{1/2}$ of 600 days
- soil photodegradation -- fulfilled as of 6/9/89 -- slow reaction; extrapolated $t_{1/2}$ ca 191 days, producing two unidentified degradates (<3% of applied)

aerobic soil metabolism -- fulfilled -- discussed in this review -- additional data on product identification was required 6/9/89, but a reevaluation of available information indicates that the previously submitted study should be accepted -- resistant to metabolism -- extrapolated $t_{1/2}$ 610 days in sandy loam soil. Residues at 1 year were terbuconazole at 67.4%, unextractables at 29.1% [ca. 20% of this (3% of the total applied) was parent compound], an unidentified extractable material at 2.1%, extractable polar compounds at 1.1%, and CO_2 at less than 0.7%.

anaerobic soil metabolism -- fulfilled (see aerobic soil study) -- extrapolated $t_{1/2}$ ca 400 days

leaching/adsorption/desorption -- fulfilled as of 6/9/89 -- in column leaching studies on sand, sandy loam, silt loam, and silty clay loam, little leaching occurred below 6 cm.

terrestrial field dissipation -- study submitted, but not accepted because of inadequate analytical methods and lack of detail in the report. EFGWB has required a *turf field dissipation study* because of this compound's use pattern

confined accumulation on rotational crops -- additional data required on characterizing residues -- *SMALL GRAIN, LEAFY VEGETABLES, AND ROOT CROPS SHOW UPTAKE*

fish bioaccumulation -- study submitted and under review at this time

10. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES:

The applicant has provided additional discussion to justify not identifying a degradate which was present at 2.2 - 2.6% [ca. 0.3 ppm] of the applied material. The applicant's reasoning is as follows:

- 1) the soil samples were treated at an exaggerated rate (10 ppm or 20 lb/A in a 6-inch soil layer).
- 2) maximum label use rates are
agriculture -- 3.6 oz applied up to seven times for a seasonal maximum of 1.58 lb
turf -- 2.72 lb/A/season.
- 3) [apparently based on a linear extrapolation -- EBC] the residue in soil under expected use rates would be 0.006 - 0.04 ppm.
- 4) the soil metabolism study only generated a few micrograms of the unknown degradate
- 5) the researchers have attempted to characterize the unknown degradate from the amount available, and it does not match chromatographically any of the known metabolites.

EFGWB agrees with the applicant that the overall pattern of degradation has been well demonstrated -- the parent compound is highly stable with an estimated half-life of 1.7 years. EFGWB will not require any further data on soil metabolism at this time, subject to the identification of specific toxicological concerns.

11. COMPLETION OF ONE-LINER: no information added

12. CBI APPENDIX: n.a.

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