Shaughnessy Number: 128997

Date out of EFGWB: 4/24/91

To: S. Lewis/B. Chambliss
Product Manager 21
Registration Division (H7505C)

From: Akiva Abramovitch, Section Head
Environmental Fate Review Section #3
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-GOG, -GIG, -GOE

Chemical Name: te(r)buconazole

Type Product: fungicide

Product Name: various

Company Name: Bayer AG

Purpose: discussion of magnitude of potential residue in crops grown from treated seed

Date Received: 12/31/90

Total Reviewing Time (days): -

EFGWB#(s): 91-0230, -231, -232

Deferrals to:

___Ecological Effects Branch, EFED

___Dietary Exposure Branch, HED

___Toxicology Branch, HED

___Non-Dietary Exposure Branch, HED

___Science Integration and Policy Staff, EFED

HJ
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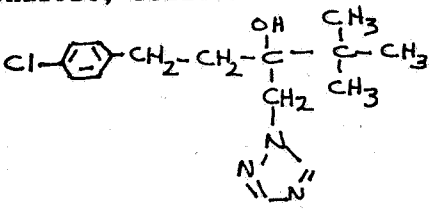
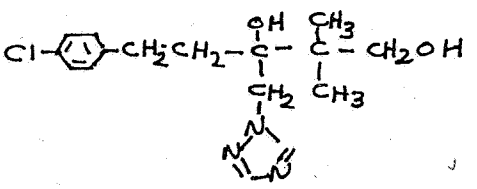
1. CHEMICAL:

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



Terbuconazole



HWG 2061

2. TEST MATERIAL: n.a.

3. STUDY/ACTION TYPE:

discussion of magnitude of potential residue in crops grown from treated seed

4. STUDY IDENTIFICATION: n.a.

5. REVIEWED BY:
Typed Name: E. Brinson Conerly
Title: Chemist, Review Section 3
Organization: EFGWB/EFED/OPP

E. B. Conerly 4/15/91

6. APPROVED BY:

Typed Name: Akiva Abramovitch
Title: Section Head, Review Section 3
Organization: EFGWB/EFED/OPP

Akiva Abramovitch
APR 15 1991

7. CONCLUSIONS:

This action was misdirected to EFGWB. Since it concerns a residue question, it should be referred to Dietary Exposure Branch. According to the applicant's reasoning, residues which would be expected to occur in crops grown from seed treated at recommended label rates would be below the level of detectability afforded by current methods. Actual levels are projected to be ca. 4 - 6 ppb each of parent, HWG 2061 (in which the t-butyl group has been hydroxylated), and an unidentified compound. There is currently a tolerance petition under review for a number of commodities. The tolerance setting process should establish whether this level of residue is of concern. Triazolyl metabolites have in general been regarded as innocuous and/or unavoidable since they occur readily as the result of natural processes.

8. RECOMMENDATIONS: None related to this action.

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

9. BACKGROUND:

Available data indicate persistence but low soil mobility. Some plant uptake occurs.

The status of data requirements is as follows:

hydrolysis -- fulfilled 6/9/89 (MRID# 407009-57), stable at pH 5, 7, and 9 -- no hydrolysis after 28 days incubation

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photolysis in water -- fulfilled 6/9/89 (MRID# 407009-58) -- no photodegradation detected; extrapolated $t_{1/2}$ of 600 days

soil photodegradation -- fulfilled 6/9/89 (MRID# 407009-58) -- slow reaction; extrapolated $t_{1/2}$ ca 191 days, producing 2 unidentified degradates (<3% of applied)

aerobic soil metabolism -- fulfilled (MRID# 407009-59) -- resistant to metabolism -- extrapolated $t_{1/2}$ 610 days in sandy loam soil. Residues at 1 year were:

tebuconazole at 67.4%
unextractables at 29.1% [ca. 20% of this (3% of the total applied) was parent compound]
unidentified extractable material at 2.1%
extractable polar compounds at 1.1%
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 6/9/89 (MRID# 407009-60) -- in column leaching studies on sand, sandy loam, silt loam, and silty clay loam, little leaching occured below 6 cm.

terrestrial field dissipation -- EFGWB has required a *turf field dissipation study* because of this compound's use pattern. Another field dissipation study is currently in house and under review.

confined accumulation on rotational crops -- fulfilled

accumulation in field rotational crops -- partially fulfilled (MRID# 409959-23) -- spinach, turnips, and wheat or sorghum were planted 30 and 120 days post-treatment in soil which had received seven applications of terbuconazole at 3.5 ppm at 10 - 25 day intervals. The original DER is attached. Except for 0.11 ppm of terbuconazole in straw from wheat planted at approximately 120 days posttreatment, terbuconazole detected in the crops from the treated plots did not significantly exceed the apparent limits of determination of terbuconazole in the various plant matrices. Note that these materials were only analyzed for parent compound.

accumulation in laboratory fish -- partially fulfilled by MRID#s 409959-05, -06, and -07 (reviewed EBC 9/12/90) -- residue characterization needed

10. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES:

The applicant provides calculations to demonstrate that "worst case" residues from seed treatment will be below the limit of detection using present analytical methods. The calculations and reasoning appear to be correct.

11. COMPLETION OF ONE-LINER: no added information

12. CBI APPENDIX: n.a.