

US EPA ARCHIVE DOCUMENT

Date Out EFB: **OCT 14 1981**To: Product Manager 21 Jacoby
TS-767From: Dr. Willa Garner *ll*
Chief, Review Section No. 1
Environmental Fate Branch

Attached please find the environmental fate review of:

Reg./File No.: 100-617Chemical: TiltType Product: FungicideProduct Name: TiltCompany Name: Ciba-GeigySubmission Purpose: Correction of our assumptions on leaching of this
chemicalZBB Code: otherACTION CODE: 400Date in: 9/4/81EFB # 937Date Completed: OCT 14 1981TAIS (level II) Days

Deferrals To:

62

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 Ecological Effects Branch Residue Chemistry Branch Toxicology Branch

1.0 INTRODUCTION AND BACKGROUND

In the September 1, 1981 "Notification of Error," Ciba-Geigy brought to our attention an error that was made in the EFB review of 6/17/81 concerning the leaching study of Tilt 3.6E Fungicide and CGA-64250 Technical (Reg. Nos. 100-617 and 100-618 respectively).

The reviewer used the amount of leachate of 9.2% for Standard Monuron instead of the actual leachate of <0.5% for Lakeland sandy soil, low in organic matter. Accordingly, he drew an erroneous conclusion as could be seen under Section 2.5, page 4 of the 6/17/81 EFB review; Section 3.e, and 4.2 of the same review (See where marked in the attached copy of pages 4 and 8, as well as Tables 2 and 3 carrying Ciba-Geigy's page Nos. 141 and ~~142~~ 142).

2.0 RECOMMENDATIONS

The following corrections should be made in the EFB review of 6/17/81:

- 2.1 Page 4, Section 2.5 under Results, the 9.2% leachate should be corrected to read <0.5%.
- 2.2 Page 8, Section 3.e should be deleted and the numbering letters f-i should be re-numbered to read e,f,g,h,.
- 2.3 Page 8, Section 4.2, the second part of the recommendation reading: "However.....assessment of hazard," should be deleted.

3.0 CONCLUSIONS

This review, in effect, clarifies the error made in the EFB *Report* of 6/17/81 concerning the leaching characteristics of CGA-64250. Our apology.

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Conclusions

Soil respiration and nitrification were not significantly reduced by treatment with up to 100 ppm CGA-64250. However, growth and nitrogen fixation were markedly reduced by as little as 1 ppm CGA-64250.

2.5

"Leaching Model Study with the Fungicide CGA-64250 in Farm Standard Soils, J.A. Gouth, 8/27/78, CIBA-GEIGY LTD, Basle, Switzerland, Accession No. 244269.

Experimental Procedures

^{14}C -CGA64250 was applied to the top of a 30 cm soil column (see Table 4 for soil characteristics) at a rate of 5kg/ha. Two hundred mm of water were applied over a 2 day period.

Both the eluted water and extracts of column segments were measured for ^{14}C content by liquid scintillation counting.

Results

As summarized in Table 5, CGA 64250 migrated to a measurable degree in the lakeland (low organic matter) soil with 9.2% appearing in the leachate, and to a lesser extent in the Collombay, Evouettes, and Vetroz soils

Conclusions

This is a valid study which satisfies environmental chemistry requirement, although a less than optimum amount of eluting water was used. The study demonstrates that CGA-64250 is capable of leaching through sandy soils which are low in organic matter.

- 2.6 "Leaching Characteristics of Aged ^{14}C -CGA-64250 Residues in Two Standard Soils," A. Keller, CIBA-GEIGY LTD, Basle, Switzerland, November 14, 1979 Accession No. 244269.

Experimental Procedures

Triazole-labelled ^{14}C -CGA-64250 was applied to the Collombey sand and Les Evouettes silty loam soils (see preceding study for soil characteristics) and the mixture was aged aerobically for 30 days at 25°C. Two cm layer of the treated soils were placed on top of 28 cm columns of untreated soils, which were eluted daily with 16 ml of water for 45 days. Both leachate and extracts of segments of the columns were analyzed by scintillation counting and TLC.

Results

The results are listed in Table 6-11. They demonstrate that leaching of aged residues of CGA-64250 was minimal. Most of the ^{14}C in the eluates was tentatively characterized by GLC-MS as 1-[2-(2',4'-dichlorophenyl)-4-propanolyl-1,3-dioxolan-2-yl-methyl]-1H-1,2,4-triazole (Metabolite Uz). Given the large volume of eluting water used (240 ml), the amount of leaching is considered low.

3.0 Executive Summary

CIBA-GEIGY has submitted the following acceptable data for registration of technical CGA-64250 and TILT 3.6E.

- a. Hydrolysis-CGA-64250 is stable towards hydrolysis at pH 1-13.
- b. Soil photolysis-CGA-64250 did not photodegrade over 24 hours on a soil surface.
- c. Adsorption/desorption-CGA-64250 adsorbed extensively to soils (K_D ranged from 8.5 to 59.0)
- d. Effects of Pesticide on Soil-Microbes-CGA-64250 did not significantly affect soil respiration and nitrification-probably through a general phytotoxic action. Degradation of cellulose, starch, and protein were not affected.
- ✓ (e) Soil mobility-CGA-64250 leached moderately through sandy soil with low organic matter, as did aged residues.
- f. Aerobic/Anaerobic Soil Degradation-CGA-64250 degraded slowly in aerobic soil (half-life = 10 weeks) but not in anaerobic on sterile soils.
- g. Aqueous photolysis - CGA-64250 photodegraded rapidly in natural or simulated sunlight in the presence of photosensitizers (half-life 2.5-24 hours), but less rapidly without sensitizers.
- h. Fish Accumulation - the status of the study is incomplete pending submission of a complete data package for validation.
- i. Activated sludge metabolism - The submitted study shows that CGA-64250 has little measureable effect on the function of the activated sludge process, nor is the sludge process effective in destroying CGA-64250.

4.0 Recommendations

1. CIBA-GEIGY has provided acceptable data to support the registration of technical CGA-64250 (hydrolysis, activated sludge).
- ✓ (2) EFB anticipates no significant problems arising from the environmental properties of CGA-64250 for the proposed turf use, based on the submitted data. However, EFB notes that CGA-64250 may leach in sandy, low organic matter soils, and suggests that future requests for major use registrations be deferred to TOX branch for a complete assessment of hazard.
3. EFB notes that the data package for the proposed use is incomplete. The following course of action is requested by EFB:

TILT CGA-64250 Reviews

The next 2 page(s) is/are not included in this copy of the TILT reviews.

The material not included contains the following type of information:

- Identity of product inert ingredients
 - Identity of product impurities
 - Description of the product manufacturing process
 - Description of product quality control procedures
 - Identity of the source of product ingredients
 - Sales or other commercial/financial information
 - A draft product label
 - The product confidential statement of formula
 - Information about a pending registration action
 - Detailed methods and results of a registrant submission.
 - Duplicate pages.
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The information not included generally is considered confidential by product registrants. If you wish to obtain the information deleted, please contact the individual who prepared this response to your request.
