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Date Out EFB: MAR 27 1979

To: Product Manager Gardner (15)
TS-767

Through: Dr. Gunter Zweig, Chief
Environmental Fate Branch

From: Review Section No. 1
Environmental Fate Branch

Attached please find the environmental fate review of:

Reg./File No.: 241-EUP-93

Chemical: 1,4-pentadien-3-one, 1,5-bis(a,a,a-trifluoro-p-tolyl)-(1,4,5,6-tetrahydro-5,5-dimethyl-2-pyrimidinyl)-hydrazone

Type Product: Insecticide

Product Name: AC217,300 Insecticide [redacted]

Company Name: Fire Ant Control INERT INGREDIENT INFORMATION IS NOT INCLUDED.

Submission Purpose: Non-Crop areas

ZBB Code: Sec. 5

Date in: 3/22/79

Date Completed: 3/26/79

Deferrals To:

☐ Ecological Effects Branch

☐ Residue Chemistry Branch

☐ Toxicology Branch

EXPEDITE

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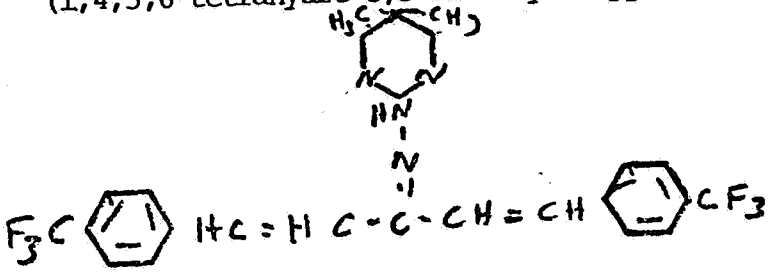
1. Introduction

1.1 AC217,300 is a new insecticide used for fire ant control.

1.2 Chemistry

1,4-pentadien-3-one, 1,5-bis (a,a,a-trifluoro-p-toly)-
(1,4,5,6-tetrahydro-5,5-dimethyl-2-pyrimidinyl-hydrazone



90-95% parent and 5-10% other impurities

Emp. For. = N_4 F_6 C_{25} H_{24}
Mol. Wt. = 494.5
Color and state = yellow, crystalline solid ordorless
Melting P. = 178-185^{0}C
Solubility = insoluble in H_2O

1.3 Product is AC217,300 Insecticide [redacted] 0.75% active ingredient (1 lbs contain 0.12 oz. of active ingredient) AC217,300 Insecticide [redacted] and AC217,300 Insecticide [redacted], (1 lb contains 0.12 oz. AI), and AC217,300 Insecticide [redacted] (1 lb is 0.06 oz. AI). INERT INGREDIENT INFORMATION IS NOT INCLUDED

1.3 The permit request use on 12,000 acres and 175 pounds technical shipped. Plots well ranged from 10 to 100 acres of Noncropland in Alabama, Florida, Georgia, Louisiana, Mississippi, South Carolina and Texas.

2.0 Directions for use

Apply 0.75-1.75 lbs/A (0.09 to 0.21 oz. AI) broadcast single or split application with ground equipment or aircarft. If necessary retreat 4 to 5 months after first treatment. Dispose of container by incineration or in landfill or burry in a safe place. This product is toxic to fish. Keep out of lakes, streams or ponds.

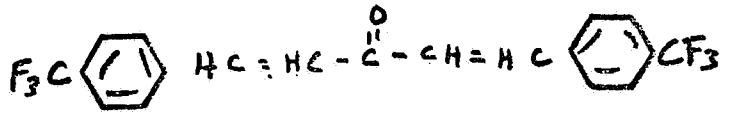
3 Discussion of data

3.1 Hydrolysis

The Hydrolysis of Carbon -14 Labeled CL217,300 in an Aqueous

System. Section D2, Exhibit 1.

The T 1/2 of parent at pH of 3,6 and 9 (35^0C) was greater than 30 days (in darkness). At ph6 there was 20% hydrolyzed in 30 days with CL98724 as



the major degradate (11.5%) and 7 other minor degradates.

3.2 Aerobic Soil Metobolism

Preliminary Aerobic soil metabolism Section D2, Exhibit 3. See the following table for result at the end of 1 month in Princeton sandy loam.

	% of Dose
Ethylene glycol trap	0.01
NaOH trap	2.6 ($^{14}CO_2$)
Acetone extract	62.9
MeOH extract	9.0
5% HCl = MeOH	5.4
5% NH_4OH = MeOH	4.8
Unextractable	6.0
Total	90.7%

The acetone extract was analyzed by TLC. Radiospot #1 contributing 87.1% to the total radioactivity in the acetone extract (54.8%) of the initial dose) was parent CL217,300 and 4 other degradates.

4 Conslusions

4.1 Hydrolysis

CL217,300 is stable to hydrolysis within 30 days (35^0C). Only 20% degradation at pH6.

4.2 Aerobic soil metabolism

After one month 54.8% was parent compound, 2.6% $^{14}CO_2$. 6% bound, 9.3% unaccounted for and the rest not identified.

4.3 The following studies are recorded but only a cusory review was made and helpful information recorded.

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4.3.1 Leaching

Mobility of CL217,300. Section D2, Exhibit 2. Preliminary study indicates that CL217,300 is not mobile.

4.3.2 Model Ecosystem

Comparative Biodegradability, Environmental Fate and Ecological Magnification of Carbon-14 Mirex and carbon-14 CL217,300 in a Ecosystem. Section D2, Exhibit 4.

Metcalf system of a terrestrial/aquatic interface and a seven-element food chain.

	CL217,300		Mirek	
Component	ppb	BCF	ppb	BCP
Water	.43-0.527	-	0.119-168	-
Algai	73.7	170	600	5,042
Daphnia	164	311	189	1,123
Mosquito-larvae	301	571	335	1,993
Snails	247	569	1,824	15,328
Fish-(Gambusia)	41.3	95	276.5	2,324

4.3.3 Residues in Grass

Residue and Metabolism of CL217,300 in Bahia Grass grown in plots treated with Carbon-14 Labeled Compound, Section D2, Exhibit 5.

Grass samples were taken 37 days after treatment and analyzed for gross radioactivity. On a fresh weight basis residues were 0.025 and 0.017 ppm and 0.017 ppm (ave. 0.022 ppm).

5.0 Recommendation

5.1 The fate of CL317,300 is known for this noncrop use under the EUP Program.

5.2 PM-Note:

The data have not been reviewed as thoroughly as it would be for a Section 3 submission.

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