Shaughnessy No.: 128701

Date Out EAB: MAY 10 1985

TO: J. Housenger
Product Manager #
Registration Division
TS-767

FROM: Samuel M. Creeger, Chief
Environmental Chemistry Review Section No. 1
Exposure Assessment Branch
Hazard Evaluation Division

Attached please find the environmental fate review of:

Reg./File No.: 85-TX-05

Chemical: Fenoxyprop

Type Product: Herbicide

Product Name: WHIP 1 EC Herbicide

Company Name: The State of Texas

Submission Purpose: Emergency exemption, for use on rice

Action Code: 500

Date In: 2/28/85

EAB # 5403

Date Completed: MAY 10 1985

TAIS (Level II)	Days
51	1.5

Deferrals To:

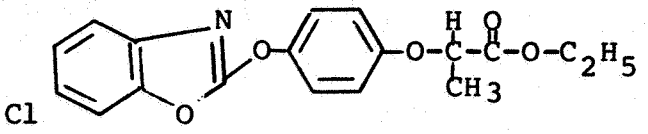
_____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

1. CHEMICAL:

- o Common name: Fenoxyprop
- o Trade name: WHIP
- o Company code: Hoe-33171
- o Chemical name: Ethyl 2-[4-[(6-chloro-2-benzoxazolyl)oxy] phenoxy]propanoate
- o Chemical structure:



2. TEST MATERIAL: Not applicable.

3. ACTION TYPE: Emergency exemption, for use on rice in Texas.

4. STUDY IDENTIFICATION: No new data were submitted.

5. REVIEWED BY:

Soobok Hong, Ph.D.
Chemist
Environmental Chemistry Review Section 1/EAB/HED

Soobok Hong 5-9-85

6. APPROVED BY:

Samuel M. Creeger, Chief
Supervisory Chemist
Environmental Chemistry Review Section 1/EAB/HED

Samuel M Creeger MAY 10 1985

7. CONCLUSIONS:

7.1 The environmental fate data so far reviewed and accepted by EAB are summarized as follows:

- o Hydrolysis: (11/3/83) Stable at pH 5 ($t_{1/2}$ = 700 days) and pH 7 ($t_{1/2}$ = 100 days) and hydrolyzed at pH 9 to corresponding acid with a $t_{1/2}$ of 2.4 days. The acid is stable to hydrolysis.
- o Aerobic soil metabolism: (11/3/83, 2/17/84) Metabolized rapidly to corresponding acid and other two minor metabolites which eventually degrade to CO_2 (10-20 % in 42 days). Soil binding seems play a major role. The half-life of parent plus the acid was about 5-14 days.
- o Aerobic aquatic metabolism: (4/10/84) Similar to aerobic soil metabolism except faster in hydrolysis and slower in CO_2 formation (2 % in 29 days). No half-life estimation of parent plus the acid was given.

- o Anaerobic aquatic metabolism (3/4/85): Similar to aerobic aquatic metabolism. The half-life of parent plus the acid was about 40-46 days. A minor deficiency regarding the half-life calculation indicated in the 3/4/85 review is not considered important.

- o Leaching/aged leaching (11/3/83): No leaching potential (soil TLC).

- o Rotational crops (1/4/84): Support rotational crop intervals of 4 and 12 months (wheat, lettuce, carrots and radish).

7.2 A fish accumulation study using nonlabeled fenoxyprop and pumpkinseed sunfish showing a BCF of 384 was reviewed (4/10/84), and accepted for an EUP only. A new, radiolabeled study using blugill sunfish need to be done for registration because the current cold study does not analyze for accumulation of residues containg the phenoxy ring or for residues containing fragments of the 6-chloro-2,3-dihydrobenzoxazol-2-one moiety.

7.3 The following requirements for use on <u>rice</u> have not yet been satisfied:

- o Photolysis in water
- o Water field dissipation
- o Irrigated crop (accumulation)

7.4 For uses on terrestrial crops, the following data are required:

- o Photolysis in water and on soil
- o Soil field dissipation
- o anaerobic soil metabolism: A study was reviewed (11/3/83), but deficiencies were indicated in that review.

7.5 For the requested Section 18 use of fenoxyprop on rice, data listed in section 7.2 and 7.3, above are deficient/lacking.

9. <u>BACKGROUND</u>:

A. <u>Introduction</u>

The State of Texas is requesting an specific emergency exemption to authorize use of fenoxyprop (WHIP®) for the control of the grassy weeds sprangletop and sprangletop/ barnyard grass in emerged rice in the 1985 growing season.

Fenoxyprop is an herbicide under experimentation on rice (8340-EUP-8) and soybeans.

It is reported that every year a certain percent of the Texas rice acreage is heavily infested with grasses that are not adequately controlled with conventional herbicide programs. The present herbicides are not always effective due to adverse weather early in the season. These early season dry, cool windy conditions result in poor performance of the initial herbicide applications on approximately 10 % of the total acreage. Therefore, there is a need for a herbicide such as WHIP® to control late escaped grasses.

B. Directions for Use

A copy of the proposed label is attached. Brifely, WHIP® 1 EC Herbicide (1 lb ai/gal) is applied when the target weeds (sprangletop and barnyard grass) are at 1 leaf to 2 tiller stage at 0.15 lb ai/A by air or ground equipment.

C. Requested Program

A total of 3816 pounds fenoxyprop (3816 gallons of formulation) and a total of 25,000 acres in several counties of Texas are involved in the program. The period of application will begin approximately April 15, 1985 and will end approximately July 30, 1985.

10. DISCUSSION OF INDIVIDUAL STUDIES:

No new data were submitted. However, a summary of residue and environmental data was included in the submission. Among the data discussed in the summary, "Soil Absorption" (sic) (Tab 3-35) and "Partition Cosfficient" (Tab D-36) have not been reviewed by EAB. It is reported that the partition coefficients of Hoe-33171 were about 26, 36, and 180 for Versuchfeld sand, Hazenbuhl sandy loam, and Neuhofen neu sand, respectively, and that the octanol-water partition coefficient was 19,100.

11. ONE-LINER: A revised (soil half-lives and soil adsorption coefficients) one-liner is attached.

12. CBI: No CBI is included in this review.

Fenoxaprop-ethyl scientific reviews

Page _____ is not included in this copy.

Pages 5 through 11 are not included in this copy.

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

X A draft product label

___ The product confidential statement of formula

___ Information about a pending registration action

___ FIFRA registration data

___ The document is a duplicate of page(s) _____

___ The document is not responsive to the request

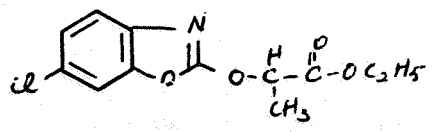
The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

EXPOSURE ASSESSMENT BRANCH ONE LINER Date: 5/10/85

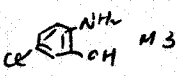
EAB FILE NO: 128701 TYPE PESTICIDE: Herbicide STRUCTURE

COMMON NAME: Fenoxyprop (renamed)

CHEMICAL NAME: Ethyl-2-[4-[(6-chloro-2-benzoxazolyl)oxy]-phenoxy]propionate



FORMULATION USES: on rice, soybeans

NAMES OF DEGRADATION PRODUCTS M 1 (acid) M2  M3

CHEMICAL PROPERTIES

Molecular Wt.	Aqueous Solubility	Vapor Pressure	Partition Coeff. K_{ow}	Henry's (atm/mol/m3)
361.8	0.9 mg.l pH 7/25°	0.187x10-7 mbar 20°	19,100	

Soil Adsorption Coefficient

Soil Type	pH	OM or OC	% Soil K_d	K_{om}	K_{oc}	Soil Col. Leaching	Soil TLC R_f	Mobility Class	
sand			26					✓	(1) Immobile
								✓	(2) Low
sandy loam			36						(3) Low to Mod
									(4) Moderate
neu sand		.	180						(5) Mobile

HYDROLYSIS

pH	Temp.	T1/2
5	25	700 d
7		100
9		2.4

PHOTOLYSIS

	T1/2	pH
AIR:		
SOIL:		
WATER:		

LABORATORY DEGRADATION (HALF-LIFE)

SOIL AEROBIC	T1/2
Parent + acid	5-14 d

SOIL ANAEROBIC	T1/2

AQUATIC AEROBIC	T1/2

AQUATIC ANAEROBIC	T1/2
Parent + acid	40-46 d

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CHEMICAL: **FIELD DEGRADATION (HALF-LIFE)**

Terrestrial [Crop Site] ______

Other [Crop Site] ______

Aquatic [Crop Site] ______

Forestry [Crop Site] ______

FOUND IN GROUND WATER? Y ______ N ______

SITE(s) AND LEVELS:

REENTRY INTERVAL ESTABLISHED? ______

ROTATIONAL CROP RESTRICTIONS: ______

FISH BIOACCUMULATION FACTORS

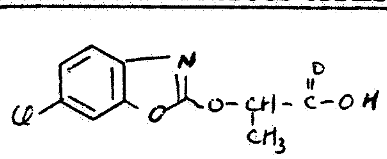
Species	Tissue Edible	Tissue Viscera	Whole Fish	Depuration Half-life
Nonlabeled study pumpkinseed sunfish	X	X	384 X	by 21 d. loss of residues
	X	X	X	

HUMAN EXPOSURE ASSESSMENT:

DEGRADATION SUMMARY: Parents and Degradates

Hoe 33717 hydrolyzed rapidly in the environment to the corresponing acid. The acid (main product) and the parent dissipated via soil binding, degradation to M 2 and M 3 and CO_2.

DEGRADATION PRODUCT NAMES OR STRUCTURES: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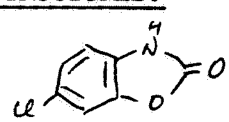
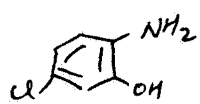

M 2 ,

M 3

REFERENCES: Company data

One-Liner Writer: S. Hong