

US EPA ARCHIVE DOCUMENT

241193  
RECORD NO.  
128701, 030063,  
030553  
SHAUGHNESSEY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 3-08-89 OUT MAR 23 1989

FILE OR REG. NO 89-SD-02  
PETITION OR EXP. NO. \_\_\_\_\_  
DATE OF SUBMISSION 2-14-89  
DATE RECEIVED BY HED 3-06-89  
RD REQUESTED COMPLETION DATE 3-18-89  
EEB ESTIMATED COMPLETION DATE 3-18-89  
RD ACTION CODE/TYPE OF REVIEW 510

TYPE PRODUCT(S) : I, D, H, F, N, R, S Herbicide  
DATA ACCESSION NO(S). \_\_\_\_\_  
PRODUCT MANAGER NO. D. Stubbs (41)  
PRODUCT NAME(S) Tiller Herbicide  
COMPANY NAME State of South Dakota  
SUBMISSION PURPOSE Proposed Section 18 for use on spring  
wheat in South Dakota

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
<u>128701</u>	<u>Fenoxaprop-ethyl</u>	<u>8.57%</u>
<u>030063</u>	<u>2,4-D, isooctylester</u>	<u>10.06%</u>
<u>030553</u>	<u>MCPA, butoxyethylester</u>	<u>29.99%</u>

EEB REVIEW

Chemical: Tiller Herbicide (Combination of fenoxaprop-ethyl, 2,4-D isooctyl ester, and MCPA butoxyethyl ester)

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The State of South Dakota is requesting an emergency exemption (Section 18) for the use of Tiller Herbicide to control foxtail spp. and millet spp. in hard red spring wheat. No data were submitted with this request.

100.2 Formulation Information

ACTIVE INGREDIENTS:

Fenoxaprop-ethyl: (+)-ethyl 2-[4-[(6-chloro-2-benzoxazolyl)oxy]phenoxy]propanoate . . . . . 8.57%\*

2,4-D, isooctylester: 2-ethylhexyl-2,4-dichlorophenoxyacetate . . 10.06%\*\*

MCPA, butoxyethylester: butoxyethyl-2-methyl-4-chlorophenoxyacetate . 29.99%\*\*\*

INERT INGREDIENTS: . . . . . 51.38%

\*Equivalent to 0.75 lb fenoxaprop-ethyl per gallon.

\*\*Equivalent to 0.58 lb 2,4-dichlorophenoxyacetic acid per gallon.

\*\*\*Equivalent to 1.75 lb 2-methyl-4-chlorophenoxyacetic acid per gallon.

100.3 Application Methods, Directions, Rates

Application Information

Proposed use is in hard red spring wheat only. This exemption allows one application per season at a maximum rate of 1.2 pints per acre, ground application only. See attached label for addition information.

100.4 Target Organisms

Target organisms are green and yellow foxtail and millet spp..

## 100.5 Precautionary Labeling

This pesticide is toxic to fish. Do not apply directly to water. Do not apply when weather conditions favor runoff or drift. Do not contaminate arable land and/or water by cleaning of equipment and/or disposal of waste.

## 101 Hazard Assessment

### 101.1 Discussion

The state of South Dakota is requesting an emergency exemption for the use of Tiller Herbicide in spring wheat. This herbicide is a multiple active ingredient product containing 8.57% fenoxaprop, 10.06% 2,4-D isooctyl ester, and 29.99% MCPA butoxyethyl ester. One application will be allowed under the proposed exemption. This request is for use on 250,000 acres of hard spring wheat in South Dakota.

Fenoxaprop is currently registered for use only in rice and soybeans. Proposed application rate in wheat is .95 to 1.2 pints Tiller Herbicide per acre (equivalent to 0.09 to 0.11 lb fenoxaprop ai per acre).

2,4-D isooctyl ester and MCPA butoxyethyl ester are currently registered for use on spring wheat. Proposed maximum application rate is 0.09 lb ai/a for 2,4-D and 0.26 lb ai/a for MCPA.

### 101.2 Likelihood of Adverse Effects on Nontarget Organisms

(Nontarget organism toxicity data are outlined in EEB letter from H. Craven to A. Valido, USFWS, dated Dec. 29, 1987. The following discussion is excerpted, in part, from that letter).

#### Terrestrial Organisms

Data from previous EEB reviews indicate that fenoxaprop is practically nontoxic to mammals and birds (avian LC<sub>50</sub>'s > 5000 ppm, mammalian LD<sub>50</sub>'s > 2000 mg/kg). At the maximum proposed rate of application, 0.11 lb ai/acre, residues on terrestrial food items are expected in the range of 0.8 to 26 ppm. These levels are well below calculated or laboratory-determined LC<sub>50</sub>'s for birds and mammals. Thus, the proposed use is not likely to cause adverse effects in birds and mammals.

Avian acute and subacute data are outstanding for 2,4-D isooctyl ester and MCPA butoxyethyl ester. A portion of the sites to be treated are in a major waterfowl production area (the prairie pothole region). Without required avian data the effect of these herbicides on nesting waterfowl is unknown.

#### Aquatic Organisms

Fenoxaprop is highly toxic to freshwater fish (bluegill LC<sub>50</sub> = 310 ppb, brown trout LC<sub>50</sub> = 480 ppb), and moderately toxic to aquatic invertebrates (daphnid LC<sub>50</sub> = 3.18 ppm). The estimated environmental concentration (EEC) would be 6.71 ppb following an application of 0.11 lb ai/acre to a pond 6 feet deep. This value is below the trigger of 31 ppb (1/10 X bluegill LC<sub>50</sub>). On the basis of these figures, the proposed use of fenoxaprop will not result in hazard to aquatic organisms.

Aquatic nontarget data (fish and invertebrates) are outstanding for both the isooctyl ester of 2,4-D and the butoxyethyl ester of MCPA. Since data are lacking on these two esters for aquatic invertebrates, a major food source for waterfowl chicks, the potential exists for waterfowl to be adversely effected.

#### Nontarget Plants

Nontarget plant data are outstanding for fenoxaprop, the isooctyl ester of 2,4-D, and the butoxyethyl ester of MCPA.

The potential exists for Tiller Herbicide to move from the site of application through volatilization (aerial application is not permitted), and runoff. Consequently, waterfowl could be adversely effected through loss of food and/or cover.

### 101.3 Endangered Species Considerations

On the basis of information in its endangered species files, EEB has determined that four endangered bird species are associated with wheat in South Dakota. The species are bald eagle, whooping crane, least tern and piping plover. Since fenoxaprop is low in toxicity to birds, direct hazard from exposure to the pesticide is not a concern. Rather, concern is with possible effects on populations of aquatic organisms which constitute a food source for these birds. However, hazard to aquatic

organisms is not anticipated, as expected levels in the aquatic environment are well below hazard levels for the most sensitive test species. Thus, use under the proposed emergency exemption fenoxaprop is not expected to adversely affect any endangered species.

Since data are unavailable for 2,4-D and MCPA, no conclusions can be reached concerning endangered species.

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### Conclusions

EEB has reviewed the proposed emergency exemption for the use of Tiller Herbicide for foxtail spp. and millet spp. on hard spring wheat in South Dakota.

Due to the low toxicity of fenoxaprop to mammals and birds, proposed use should not result in hazard to these nontarget organisms. Fenoxaprop is highly toxic to freshwater fish, however, aquatic EEC calculations indicate that expected residues in water will be below hazardous levels.

The proposed use of fenoxaprop will not adversely effect the four endangered bird species associated with wheat in South Dakota.

Data are unavailable on nontarget plant phytotoxicity for fenoxaprop. The nontarget plant hazard is unknown.

No data are available for the isooctyl ester of 2,4-D and the butoxyethyl ester of MCPA. The impact of these two herbicides on nontarget organisms is unknown.

EEB is unable to complete a full risk assesment for Tiller Herbicide because of a lack of data. The possible adverse effects that this emergency exemption could have on nontarget organisms are unknown.

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Fenoxaprop-ethyl scientific review

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