

214911
RECORD NO.
128701, 030063,
030553
SHAUGHNESSEY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 2-24-88 OUT 03 MAR 1988

FILE OR REG. NO 88-ND-02

PETITION OR EXP. NO.

DATE OF SUBMISSION 2-18-88

DATE RECEIVED BY HED 2-23-88

RD REQUESTED COMPLETION DATE 3-09-88

EEB ESTIMATED COMPLETION DATE 3-09-88

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 North Dakota

SUBMISSION PURPOSE Proposed Section 18 for use on spring

wheat in North 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>
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EEB REVIEW

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

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The State of North Dakota is requesting an emergency exemption (Section 18) for the use of Tiller Herbicide to control annual grasses and broadleaf weeds in 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 1.7 pints (0.16 lb ai fenoxaprop) per acre, ground application only. See attached label for addition information.

100.4 Target Organisms

Target organisms are annual grasses and broadleaf weeds in wheat. See attached label for list of target weed species.

100.5 Precautionary Labeling

No precautionary labeling was provided with this submission.

101 Hazard Assessment

101.1 Discussion

The state of North Dakota is requesting an emergency exemption for the use of Tiller Herbicide in spring wheat. As indicated above, Tiller is a multiple active ingredient product containing 8.57% fenoxaprop, 10.06% 2,4-D, isooctylester, and 29.99% MCPA, butoxyethylester. The 2,4-D and MCPA actives are already registered for use on wheat, so their ecological effects have been previously reviewed and will not be assessed here. The remainder of this review will deal only with the fenoxaprop component of Tiller.

Fenoxaprop is currently registered for use only in rice and soybeans. Proposed application rate in wheat is 15 to 27 fl. oz. Tiller Herbicide per acre (equivalent to 0.09 to 0.16 lb fenoxaprop ai per acre). One application will be allowed under the proposed exemption. This request is for use on 500,000 acres of spring wheat in North Dakota.

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 LC₅₀'s > 5000 ppm, mammalian LD₅₀'s > 2000 mg/kg). At the maximum proposed rate of application, 0.16 lb ai/acre, residues on terrestrial food items are expected in the range of 1 to 40 ppm. These levels are well below calculated or laboratory-determined LC₅₀'s for birds and mammals. Thus, the proposed use is not likely to cause adverse effects in birds and mammals.

Aquatic Organisms

Data from previous EEB reviews indicate that fenoxaprop is highly toxic to freshwater fish (bluegill LC_{50} = 310 ppb, brown trout LC_{50} = 480 ppb), and moderately toxic to aquatic invertebrates (daphnid LC_{50} = 3.18 ppm). To assess potential hazard to aquatic organisms, EEB used a quick aquatic EEC calculation (see attached sheet) to estimate aquatic residues from foliar application at the maximum proposed rate of 0.16 lb ai/acre. The resulting aquatic EEC of 0.976 ppb is well below the trigger value of 31 ppb ($1/10 \times$ bluegill LC_{50}). On the basis of these figures, the proposed use of Tiller will not result in hazard to aquatic organisms.

101.3 Endangered Species Considerations

On the basis of information in its Endangered Species files, EEB has determined that two endangered species of birds are associated with wheat in North Dakota. The two species are interior least tern and piping plover. Since fenoxacarb 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.

Fenoxacarb is highly toxic to freshwater fish. However, as noted above, 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 is not expected to adversely affect any endangered species.

103 Conclusions

EEB has reviewed the proposed emergency exemption for the use of Tiller Herbicide in North Dakota. Due to the low toxicity of fenoxaprop to mammals and birds, proposed use should not result in hazard to nontarget terrestrial organisms. And, although fenoxaprop is highly toxic to freshwater fish, aquatic EEC calculations indicate that expected residues in water will be well below hazardous levels, even when the product is applied at maximum rate. Finally, EEB has determined that the proposed use will not adversely affect the two endangered species of birds associated with wheat in North Dakota.

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EEC CALCULATION SHEETI. For foliar application

A. Runoff

$$\underline{0.16} \text{ lbs} \times \frac{0.01}{(\underline{1} \% \text{ runoff})} \times \frac{10 \text{ (A)}}{(\text{from 10 A. drainage basin})} = \underline{0.016} \text{ lb} \quad \frac{\text{lb}}{(\text{tot. runoff})}$$

EEC of 1 lb a.i. direct application to 1 A. pond 6-foot deep = 61 ppb

$$\text{Therefore, EEC} = 61 \text{ ppb} \times \underline{0.016} \text{ (lb)} = \underline{0.976} \text{ ppb}$$

II. For aerial application

A. Runoff

$$\underline{\hspace{1cm}} \text{ lbs} \times \frac{0.6}{(\text{appl. efficiency})} \times \frac{0.0}{(\underline{\hspace{1cm}} \% \text{ runoff})} \times \frac{10 \text{ (A)}}{(10 \text{ A. d. basin})} = \underline{\hspace{1cm}} (\text{tot. runoff})$$

B. Drift

$$\underline{\hspace{1cm}} \text{ lbs} \times \frac{0.05}{(5 \% \text{ drift})} = \underline{\hspace{1cm}} \text{ lb} \quad (\text{tot. drift})$$

$$\text{Tot. loading} = \underline{\hspace{1cm}} \text{ lb} + \underline{\hspace{1cm}} \text{ lb} = \underline{\hspace{1cm}} \text{ lbs}$$

$$\text{Therefore, EEC} = 61 \text{ ppb} \times \underline{\hspace{1cm}} (\text{lbs}) = \underline{\hspace{1cm}} \text{ ppb}$$

Fenoxaprop-ethyl scientific review

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Pages 7 through 10 are not included in this copy.

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- ☐ 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
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