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111601
SHAUGHNESSEY NO.

REVIEW NO.

EEB REVIEW

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TYPE PRODUCT(S) : I, D, H, F, N, R, S Herbicide

DATA ACCESSION NO(S). _____

PRODUCT MANAGER NO. D. Stubbs (41)

PRODUCT NAME(S) Goal 1.6E (oxyfluorfen)

COMPANY NAME State of Wisconsin

SUBMISSION PURPOSE Proposed Section 18 for use on horseradish

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.
<u>111601</u>	<u>Oxyfluorfen</u>	<u>19.4%</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

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EEB REVIEW

Chemical: Goal (oxyfluorfen)

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The State of Wisconsin is requesting an emergency exemption (Section 18) for the use of Goal herbicide to control broadleaf weeds in horseradish. No data were submitted with this request.

100.2 Formulation Information

ACTIVE INGREDIENT:

Oxyfluorfen 19.4%

100.3 Application Methods, Directions, Rates

General Information

Goal 1.6E is a selective herbicide recommended for pre-emergence application to horseradish for control of certain broadleaf weeds. Initial spray application should be made preemergence to horseradish. It may be desirable to cultivate immediately prior to application to remove germinated weeds and to cover emerging horseradish.

Dosage

Apply 2.5 pints of Goal 1.6E (0.5 lb active ingredient) per acre preemergence to horseradish.

Timing and Method of Application

For best preemergence control of susceptible weeds, apply Goal 1.6E just prior to emergence of horseradish.

Goal 1.6E should be thoroughly mixed with clean water, at recommended concentrations, and applied in a minimum of 40 gallons of water per acre. Use conventional ground spray equipment with flat fan spray nozzles, at 20 to 40 psi. Accurately calibrate spray equipment prior to each use. Avoid drift to all other crops and nontarget areas. Thoroughly flush the spray equipment (tank, hose, pump, boom) with water before and after each use. Residual Goal 1.6E remaining in spray equipment may damage other crops.

Cultural Considerations

In order to provide maximum preemergence weed control, the soil surface should be smooth and free of excessive trash (clippings, dead weeds, etc.). Rain or irrigation is not necessary immediately following application; however, preemergence weed control is best when application is followed within 2 weeks by rainfall.

Cultural practices which result in redistribution or disturbances of the soil surface after spraying will destroy the herbicidal effectiveness of the treatment. Cultivations that mix untreated soil in treated areas will also reduce the effectiveness of the treatment. The best results from Goal 1.6E are from applications on established beds which are left undisturbed during the time period for which weed control is desired.

Use Restrictions

- Do not apply more than 0.5 lb ai (2.5 pints) per acre of Goal 1.6E during one use season.
- Do not apply Goal 1.6E within 60 days of harvest.
- Read and observe all label directions before using.
- Do not contaminate irrigation water or water used for domestic purposes.
- Do not use any treated plants for feed or forage.
- Do not feed or graze animals on any areas treated with Goal 1.6E.
- Goal 1.6E should be applied only by ground equipment.

100.4 Target Organisms

Goal 1.6E will provide preemergence control of the following weeds when applied at the recommended dosage:

Common lambsquarters	<u>Chenopodium album</u>
Common purslane	<u>Portulaca oleracea</u>
Pennsylvania smartweed	<u>Polygonum pensylvanica</u>
Redroot pigweed	<u>Amaranthus retroflexus</u>
Shepherdspurse	<u>Capsella bursa-pastoris</u>

100.5 Precautionary Labeling

No precautionary labeling was provided with this submission.

101 Hazard Assessment

101.1 Discussion

The state of Wisconsin is requesting an emergency exemption for the use of Goal 1.6E in horseradish. Under this exemption, an estimated 700 acres will be treated. The primary area of production is in the northwest part of Wisconsin, in Buffalo, Chippewa, Dunn, Eau Claire, and Pepin Counties.

Goal 1.6E is currently registered for use in artichokes (globe), nonbearing citrus, conifers (seedbeds, transplants, and container stock), corn, cotton, fallow bed, mint, onions, and tree fruit.

101.2 Likelihood of Adverse Effects on Nontarget Organisms

On the basis of data in the Ecological Effects Branch (EEB) files, Goal is low to moderate in toxicity to birds and mammals, and moderate to high in toxicity to fish and aquatic invertebrates (bluegill LC_{50} = 200 ppb; rainbow trout LC_{50} = 410 ppb; daphnid LC_{50} = 1.5 ppm). To assess potential hazard to aquatic organisms, EEB calculated a rough aquatic EEC (see attached sheet). Expected concentration in the freshwater environment would be 3.05 ppb following application at the recommended rate of 0.5 lb ai per acre. As the LC_{50} for the most sensitive aquatic species (bluegill) is 200 ppb, the calculated aquatic EEC of 3.05 ppb does not approach any hazard trigger for aquatic organisms. On the basis of this calculation, along with the very limited acreage (700 acres) to be treated, the proposed use is not expected to result in adverse effects on nontarget aquatic organisms.

101.3 Endangered Species Considerations

The only endangered species identified as living in the listed counties is the bald eagle. In view of relatively low avian toxicity, limited acreage, and minimal exposure use, hazard to this species is not anticipated under the proposed exemption.

Use in counties other than those listed may result in exposure of additional endangered species, including some species of plants. This hazard cannot be assessed unless names of counties are provided.

103 Conclusions

EEB has reviewed the proposed emergency exemption for the use of Goal 1.6E herbicide in horseradish in Wisconsin. Based upon information from previous reviews and a rough

aquatic EEC calculation, and considering the limited acreage to be treated, EEB concludes that use under the proposed Section 18 should not result in adverse effects on nontarget organisms.

Hazard to endangered species is not anticipated, as long as application is restricted to the listed counties. Application outside the 5 listed counties may result in exposure of additional endangered species, and should not be authorized under this exemption.

Allen W. Vaughan 3.20.90
Allen W. Vaughan, Entomologist
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Norman J. Cook 3.20.90
Norman J. Cook, Section Head
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

James W. Akerman
James W. Akerman, Chief
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

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EEC CALCULATION SHEETI. For un-incorporated ground application

A. Runoff

$$\underline{0.5} \text{ lb(s)} \times \frac{0.01}{(1\% \text{ runoff})} \times 10 \text{ (A)} = \underline{0.05} \text{ lb(s)}$$

(from 10 A. (tot. runoff) drainage basin)

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

Therefore, EEC = 61 ppb x $\underline{0.05}$ (lb) = $\underline{3.05}$ ppb

II. For incorporated ground application

A. Runoff

$$\underline{\quad} \text{ lb(s)} \div \frac{\underline{\quad} \text{ (cm)}}{(\text{depth of incorporation})} \times 0.0 \times 10 \text{ (A)} = \underline{\quad} \text{ lb(s)}$$

(10 A. (tot. runoff) d. basin)

Therefore, EEC = 61 ppb x $\underline{\quad}$ (lbs) = $\underline{\quad}$ ppb

III. For aerial application (or mist blower)

A. Runoff

$$\underline{\quad} \text{ lb(s)} \times 0.6 \times \frac{0.0}{(\text{appl. efficiency})} \times 10 \text{ (A)} = \underline{\quad} \text{ lb(s)}$$

(10 A. (tot. runoff) d. basin)

B. Drift

$$\underline{\quad} \text{ lb(s)} \times 0.05 = \underline{\quad} \text{ lb(s) (tot. drift)}$$

(5 % drift)

Tot. loading = $\underline{\quad}$ lb(s) + $\underline{\quad}$ lb(s) = $\underline{\quad}$ lb(s)

(tot. runoff) (tot. drift)

Therefore, EEC = 61 ppb x $\underline{\quad}$ (lbs) = $\underline{\quad}$ ppb