

File

262131
RECORD NO.

125401
SHAUGHNESSEY NO

REVIEW NO.

EEB REVIEW

DATE: IN 04/06/90 OUT APR 25 1990

FILE OR REG. NO. 90-WI-10

PETITION OR EXP. NO. _____

DATE OF SUBMISSION 03/30/90

DATE RECEIVED BY EFED _____ 04/04/90

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RD ACTION CODE/TYPE OF REVIEW _____ 510

TYPE PRODUCT(S) _____ Herbicide

DATA ACCESSION NO(S) _____

PRODUCT MANAGER, NO. _____ Cool (41)

PRODUCT NAME(S) _____ Command 4 EC

COMPANY NAME WI Dept.Agriculture

SUBMISSION PURPOSE Sec.18 - WI to control annual weeds in
cabbage.

SHAUGHNESSEY NO.

CHEMICAL

% A.I.

125401

Clomazone

47.1

*** 978

ECOLOGICAL EFFECTS BRANCH REVIEW
SECTION 18

Command

100 Section 18 Application

100.1 Nature and Scope of Emergency

The State of Wisconsin requests a specific exemption to use Command 4 EC on cabbage. The crisis has occurred because of the unavailability of nitrofen, CDAA, and CDEC.

100.2 Formulation Information

ACTIVE INGREDIENTS:-----47.1%
2-(2-Chlorophenyl)methyl-4,4-dimethyl-3-isoxazolidinone
INERT INGREDIENTS:-----52.9%

100.3 Application Methods, Directions, Rates

Use rate is 0.25 lb ai/acre incorporated prior to seeding or 0.25 to 0.50 lb ai/a incorporated prior to transplanting. The 0.25 lb rate is recommended on sandy soils. Only one application will be made per season. Approximately 5,000 acres are to be treated. Counties are not specified.

100.4 Target Organism

Crabgrass, (large, smooth), panicum (fall, common), foxtail (green, giant, robust), broadleaf signalgrass, field sandbur, barnyardgrass, seedling Johnsongrass, velvetleaf, spurred anoda, purslane, lambsquarters, jimsonweed, common ragweed, Pennsylvania smartweed, prickly sida, and common chickweed.

100.5 Precautionary Labeling

"Off-site movement of spray or vapors of Command herbicide can cause foliar whitening or yellowing of some plants. Prior to making applications, read and strictly follow all precautions and applications on this label and the Federal label.

"Do not apply Command 4 EC within 45 days of harvest. Do not apply directly to any body of water. Do not apply where runoff is likely to occur. Do not contaminate water by cleaning of equipment or disposal of wastes. Do not apply Command 4 EC through irrigation systems. Do not apply Command 4 EC when weather conditions favor drift. Do not apply Command

4 EC with aerial spray equipment. Do not apply Command 4 EC within 1,500 feet of the areas listed below:

Residences
Towns or Subdivisions
Commercial Vegetable Production
(except sweet corn)
Commercial Fruit Production
Commercial Nurseries
Commercial Greenhouses
Wheat, barley, rye, or oat fields
intended for grain."

101 Hazard Assessment

101.1 Discussion

The state of Wisconsin is requesting an emergency exemption for use of Command 4 EC for weed control in cabbage. One application will be allowed. Proposed rate is 0.25 to 0.5 lb ai/A preplant incorporated (direct seeded or transplant).

This request is for use on approximately 5,000 acres, counties unspecified.

101.2 Likelihood of Adverse Effects on Nontarget Organisms

Terrestrial Organisms

Data from previous reviews indicate that clomazone is practically nontoxic to birds on both an acute oral basis and a dietary basis (bobwhite quail and mallard LD50's >2510 mg/kg, LC50's >5620 ppm). The available data on rats suggest that the chemical also has a low mammalian toxicity. Maximum residues, based on the nomograph of Kenaga and Hoerger (1972), were calculated to be as follows:

<u>Substrate</u>	<u>Residue (ppm)</u>
Short range grass	120.0
Long grass	55.0
Leaves and leafy crops	62.5
Forage	29.0
Pod containing seeds	6.0
Fruit	3.5

These levels are below calculated or laboratory determined toxicity values for mammals and birds.

No data are available on the effects of clomazone on pollinators, but in view of the low exposure potential, Command would not be expected to impact honey bees.

Aquatic Organisms

Clomazone is slightly toxic to freshwater fish, with LC50's of 19 mg/l for rainbow trout and 34 mg/l for bluegill sunfish. A daphnid study indicated that clomazone is moderately toxic to aquatic invertebrates (LC50 = 5.2 mg/l). The MATC for Daphnia magna was determined to be between 2.2 and 4.38 mg/l. Estimated environmental concentration (EEC) should be 15.25ppb 1/ in a pond six feet deep following 5% runoff from 10 acres receiving an application of 0.5 lb ai/A. This value is less than the lowest aquatic LC50 and does not exceed the 1/10 LC50 trigger for restricted use classification using the most sensitive test species. On the basis of these figures, the proposed use of clomazone will not result in hazard to aquatic organisms.

1/ $0.5 \text{ lb} \times 10 \text{ acres} \times 5\% \times 61 \text{ ppb} = 15.25 \text{ ppb}$

Nontarget Plants

Nontarget plant data are unavailable for clomazone.

The potential exists for herbicides to move from the site of application through drift during application, volatilization, and runoff. Command will be applied by ground equipment only and drift is considered to be negligible. The herbicide is considered to be volatile (vapor pressure 1.44×10^{-4} mm Hg @ 25C) and soluble (water solubility 1100 ppm). Incorporation is required and is expected to reduce this hazard.

101.3 Endangered Species Considerations

On the basis of information in its endangered/threatened species files, EEB has determined that the bald eagle, Iowa pleistocene snail, and 3 plants (prairie bush-clover, dwarf lake iris, and Eastern prairie fringed orchid) are found in the counties where cabbage is grown in Wisconsin 1/.

1/ Information on where cabbage is grown was obtained from Dr. Herbert J. Hopen, Department of Horticulture, University of Wisconsin, (608) 262-3988. According to Dr. Hopen, cabbage is grown in Brown, Columbia, Dane, Kenosha, Milwaukee, Oconto, Outagamie, Racine, Rock, Waukesha, and Winnebago counties

On April 19, 1990, Ms. Diane Hills Mochone, Wisconsin Department of Natural Resources (WDNR), Bureau of Endangered Resources, (608) 266-7012, was contacted concerning the location of the threatened plant species in relation to the areas where cabbage is grown. Ms. Mochone expressed concern that Wisconsin's endangered/threatened plant species may not appear on EEB's listing. No information was immediately available on the location of these species. Therefore, EEB is suggesting that the Wisconsin Department of Agriculture, Trade and Consumer Protection (the applicant for this exemption), contact the WDNR to resolve this issue prior to use of Command 4 EC.

Hazard to birds and invertebrates from exposure is considered to be minimal based on the low order of toxicity.

Based on the potential for Command 4 EC to move from the site of application through volatilization, there is a possibility that threatened plants could be adversely affected. However, incorporation is required following application and this should lessen the probability of off target movement, thereby reducing the hazard.

101.4 Adequacy of Toxicity Data

The existing data base is not adequate to fully assess the hazard to nontarget organisms for this Section 18. Data are outstanding for seed germination/seedling emergence, vegetative vigor, and aquatic plant growth.

101.5 Adequacy of Labeling

The label submitted is adequate for this Sec. 18.

103 Conclusions

EEB has reviewed the proposed emergency exemption for the use of Command 4 EC in Wisconsin for control of weeds in cabbage.

Mammals, birds, aquatic organisms, and honey bees are not expected to be adversely affected by this exemption. The hazard to nontarget plants should be minimized by limiting use to preplant incorporation.

Endangered/threatened species, other than plants, are not expected to be impacted. The hazard to threatened plants is

expected to be reduced by limiting use to preplant incorporation.

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