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RECORD NO.

125401

SHAUGHNESSEY NO

REVIEW NO.

EEB REVIEW

DATE: IN 04/23/90 OUT MAY 14 1990

FILE OR REG. NO. 90-VA-08

PETITION OR EXP. NO. _____

DATE OF SUBMISSION 04/04/90

DATE RECEIVED BY EFED _____ 04/13/90

RD REQUESTED COMPLETION DATE _____ 04/27/90

EEB ESTIMATED COMPLETION DATE _____ 04/30/90

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 _____ VA Dept. Agriculture

SUBMISSION PURPOSE _____ Sec.18 - VA control annual weeds in
_____ peppers.

SHAUGHNESSEY NO. _____ CHEMICAL _____ % A.I. _____

125401 _____ Clomazone _____ 47.1

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ECOLOGICAL EFFECTS BRANCH REVIEW
SECTION 18

Command

100 Section 18 Application

100.1 Nature and Scope of Emergency

The State of Virginia requests a specific exemption to use Command on peppers. The crisis occurred because of the cancellations of diphenamid and chloramben.

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 0.5 lb ai/acre preplant incorporated. One application per year May 1 through September 1990 to 1,500 acres in Accomack and Northampton counties.

100.4 Target Organism

Broadleaf weeds.

100.5 Precautionary Labeling

"Strictly follow all label restrictions and warnings regarding drift control, both spray and vapor. Incorporate immediately to reduce the potential for off-site movement. Do not apply within 1500 feet of sensitive crops, including fruits, vegetables, field crops, ornamentals, or neighbors."

101 Hazard Assessment

101.1 Discussion

The state of Virginia is requesting an emergency exemption for use of Command 4 EC for weed control in peppers. One application will be allowed. Proposed rate is 0.5 lb ai/A preplant incorporated, April through September.

This request is for use on approximately 1,500 acres, in Accomack and Northampton counties. The request did not specify these two counties, however EEB contacted Dr. Henry

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Wilson, Virginia Polytechnic Institute and State University (804-442-6411) on April 24, 1990 and was advised that these two counties produced the majority of peppers (bell and processing types) in Virginia. Dr. Wilson had no objection to restricting use to these two counties.

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 15.25 ppb 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 dose 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, volatilization, and runoff. Command will be applied by ground equipment only and drift during application is considered to be negligible. The herbicide has been characterized as volatile (vapor pressure 1.44×10^{-4} mm Hg @ 25C) and soluble (water solubility 1100 ppm). Incorporation is expected to reduce the hazard to nontarget plants from off-target movement (OTM).

101.3 Endangered Species Considerations

On the basis of information in its endangered/threatened species files, EEB has determined that 1 mammal, 3 birds, 1 insect, and 3 reptiles have been identified in Accomack and Northampton counties, Virginia (Delmarva Peninsula fox squirrel, bald eagle, Arctic peregrine falcon, piping plover, Northeastern beach tiger beetle, Kemp's (Atlantic) Ridley sea turtle, leatherback sea turtle, and loggerhead sea turtle).

Hazard to mammals, birds, insects, and reptiles from exposure is considered to be minimal based on the low order of toxicity and relatively low application rate.

101.4 Adequacy of Toxicity Data

The existing data base is adequate to assess the hazard to nontarget organisms, other than plants, for this Section 18. Data are outstanding for seed germination/seedling emergence, vegetative vigor, and aquatic plant growth.

101.5 Adequacy of Labeling

No label was submitted with this request, although EPA Reg. No. 279-3053 was cited.

103 Conclusions

EEB has reviewed the proposed emergency exemption for the use of Command 4 EC in Virginia for weed control in peppers (bell and processing types).

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

Endangered/threatened species are not expected to be impacted.

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