FIL

260666
RECORD NO.

125401
SHAUGHNESSEY NO

REVIEW NO.

EEB REVIEW

DATE: IN 03/15/90 OUT 3-26-90

FILE OR REG. NO. 90-LA-02,90-PA-01,90-NJ-06

PETITION OR EXP. NO.

DATE OF SUBMISSION 02/15/90,02/27/90

DATE RECEIVED BY EFED 03/09/90

RD REQUESTED COMPLETION DATE 03/22/90,03/23/90

EEB ESTIMATED COMPLETION DATE 03/22/90,03/23/90

RD ACTION CODE/TYPE OF REVIEW 510

TYPE PRODUCT(S) Herbicide

DATA ACCESSION NO(S)

PRODUCT MANAGER, NO. Cool (41)

PRODUCT NAME(S) Command

COMPANY NAME LA Dept.Agri/PA Dept.Agri/NJ Dept.Agri

SUBMISSION PURPOSE Sec.18's-LA control annual weeds in sweet potatoes. PA & NJ control of weeds in pepper.

SHAUGHNESSEY NO.	CHEMICAL	% A.I.
125401	Clomazone	

** 942

1

ECOLOGICAL EFFECTS BRANCH REVIEW
SECTION 18

Command

100 Section 18 Application

100.1 Nature and Scope of Emergency

The State of New Jersey 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 would be 0.5 to 0.75 lb ai/acre preplant incorporated immediately after application to reduce vapor drift. One application per year. Ground row crop sprayer, April 10 through October 31 1990 growing season to 8000 acres, counties not specified.

100.4 Target Organism

Broadleaf weeds.

100.5 Precautionary Labeling

From EPA Reg No. 279-3053

"Do not apply directly to water or wetlands. Do not apply when weather conditions favor drift from area treated. Do not apply were runoff is likely to occur. Do not contaminate water by cleaning of equipment or disposal of wastes. Apply this product only as specified on this label."

"Off-site movement of spray drift or vapors of COMMAND 4EC herbicide can cause foliar whitening or yellowing of some plants. Prior to making applications, read and strictly follow all precautions and application instructions on this label."

From information submitted by the state.

"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 1000 feet of sensitive crops, including fruits, vegetables, field crops, ornamentals, or neighbors".

101 Hazard Assessment

101.1 Discussion

The state of New Jersey is requesting an emergency exemption for use of Command for weed control in peppers (bell and processing types). One application will be allowed. Proposed rate is 0.5 to 0.75 lb ai/A applied April through October, preplant incorporation.

This request is for use on approximately 8000 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:

Substrate	Residue (ppm)
Short range grass	180.00
Long grass	82.50
Leaves and leafy crops	93.75
Forage	43.50
Pod containing seeds	9.00
Fruit	5.75

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

999

3

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 22.9 ppb 1/ in a pond six feet deep following 5% runoff from 10 acres receiving an application of 0.75 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/ 0.75 lb x 10 acres x 5% x 61 ppb = 22.9 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 under this condition. The herbicide is considered to be volatile (vapor pressure 1.44 x 10-4 mm Hg @ 25C) and soluble (water solubility 1100 ppm), however incorporation is required and is expected to reduce these hazards.

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 reptile, 1 fish, and 2 plants have been identified in New Jersey (Indiana bat, bald eagle, piping plover, Eskimo curlew, loggerhead sea turtle, shortnose sturgeon, swamp pink, and small whorled pogonia).

Hazard to mammals, birds, reptiles, and aquatic species from exposure is considered to be minimal based on the low order of toxicity.

The endangered small whorled pogonia, Isotria medeoloides is associated with a variety of forest types but is most often found in open areas of deciduous forests. The swamp pink, Helonias bullata is associated with freshwater wetlands including spring seepages, swamps, bogs, meadows, and margins of meandering small streams. Consequently, the probability of exposure from this use pattern is remote.

945

4

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 in New Jersey for weed control in peppers.

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 the use to preplant incorporation.

Endangered/threatened species are not expected to be impacted.

Charles R. Lewis 3/23/90
Charles R. Lewis, Agronomist
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Ann M. Stavola 3/26/90
Ann M. Stavola, Acting Section Head
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

James W. Akerman 3/26/90
James W. Akerman, Chief
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

946

5