

US EPA ARCHIVE DOCUMENT

File

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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

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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

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 _____

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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 Louisiana requests a specific exemption to use Command on sweet potatoes. The crisis occurred because of the cancellations of chloramben and the ineffectiveness of Eptam and Dacthal.

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 1.0 to 1.5 lb ai/acre. One application per year immediately after transplanting. March 1 through July 15 to 20,000 acres in the parishes of Avoyelles, Bienville, Evangeline, Franklin, Grant, Morehouse, Rapides, St. Landry, St. Martin, Union, West Carroll, and West Feliciana.

100.4 Target Organism

Cocklebur (Xanthium strumarium), teaweed (Sida spinosa), velvetleaf (Abutilon theophrasti), broadleaf signalgrass (Brachiaria platyphylla), large crabgrass (Digitaria sanguinalis), and goosegrass (Eleusine indica).

100.5 Precautionary Labeling

From EPA Reg. No. 239-3053

"Do not apply directly to water or wetlands. Do not apply when weather conditions favor drift from area treated. Do not apply where 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."

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101 Hazard Assessment

101.1 Discussion

The state of Louisiana is requesting an emergency exemption for use of Command for weed control in sweet potatoes. One application will be allowed immediately after transplanting. Proposed rate is 1.0 to 1.5 lb ai/A applied March 1 through July 15, 1990. Soil incorporation is not specified.

This request is for use on approximately 20,000 acres, in the parishes listed in Sec. 100.3.

Louisiana has requested an emergency exemption for use of Command in sweet potatoes for the last three growing seasons.

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	360.00
Long grass	165.00
Leaves and leafy crops	187.50
Forage	87.00
Pod containing seeds	18.00
Fruit	10.50

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 45.75 ppb 1/ in a pond six feet deep following 5% runoff from 10 acres receiving an application of 1.5 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/ 1.5 lb x 10 acres x 5% x 61 ppb = 45.75 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 1.44×10^{-4} mm Hg @ 25C) and soluble (water solubility 1100 ppm), without incorporation it is possible that off-target movement will occur resulting on nontarget plant damage. The Agency record on Command contains numerous reported incidents of adverse effects on nontarget plants when the herbicide is not incorporated. Requiring incorporation for this use will reduce the potential hazard of off-target plant damage.

101.3 Endangered Species Considerations

On the basis of information in its endangered/threatened species files, EEB has determined that 3 birds and 2 aquatic species have been identified in the parishes where Command will be applied, (bald eagle, piping plover, red-cockaded woodpecker, Louisiana pearlshell, and pallid sturgeon).

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

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 Louisiana for weed control in sweet potatoes.

Mammals, birds, and aquatic organisms are not expected to be adversely affected by this exemption. However, the potential exists for this use to adversely effect nontarget plants because the herbicide will not be incorporated. The hazard would be reduced by requiring incorporation.

Endangered/threatened species are not expected to be impacted.

Louisiana has requested an emergency exemption for use of Command in sweet potatoes for the last three growing seasons.

Charles 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)