

US EPA ARCHIVE DOCUMENT

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RECORD NO.

125401
SHAUGHNESSEY NO.

EEB REVIEW

DATE: IN 05-03-89 OUT MAY 9 1989

FILE OR REG. NO. 89-NJ-09

PETITION OR EXP. NO. _____

DATE OF SUBMISSION 04-07-89

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RD ACTION CODE/TYPE OF REVIEW 510

TYPE PRODUCT Herbicide

DATA ACCESSION NOS. _____

PRODUCT MANAGER NO. D. Stubbs (41)

PRODUCT NAME(S) Command 4EC

COMPANY NAME State of New Jersey

SUBMISSION PURPOSE Proposed Section 18 for use on
squash

SHAUGHNESSEY NO.	CHEMICAL & FORMULATION	%AI
<u>125401</u>	<u>Command herbicide</u>	<u>47.1%</u>
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EEB BRANCH REVIEW

Command Herbicide (Clomazone)

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The State of New Jersey is requesting an emergency exemption (Section 18) for the use of Command herbicide to control annual broadleaf weeds in squash. No new data were submitted with this request.

100.2 Formulation Information

Command 4EC

ACTIVE INGREDIENT:

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

This product contains 4 lb ai per gallon.

100.3 Application Methods, Directions, Rates

A. Timing and Method of Application

Preplant incorporate immediately after application to reduce vapor drift. Rate of application is 0.38 to 0.75 lb ai/acre (0.75 to 1.5 pints Command 4EC per acre). One application is allowed under this exemption. 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, or ornamentals.

100.4 Target Organisms

Target organisms include the following broadleaf weeds: common lambsquarters, jimsonweed, purslane, common ragweed, smartweed, velvetleaf, Venice mallow, common cocklebur, pigweed, Galinsoga sp., and others.

101 Hazard Assessment

101.1 Discussion

The state of New Jersey is requesting an emergency exemption for the use of Command herbicide to control broadleaf weeds in squash. Proposed maximum application rate is 1.5 pt (0.75 lb ai) per acre,

with one application allowed. Exemption period is May 1 through October 31, 1989. This request is for use on 4000 acres of squash.

Command herbicide is currently registered for use on soybeans, which are grown on approximately 155,000 acres in New Jersey (1982 Census of Agriculture).

101.2 Likelihood of Adverse Effects on Nontarget Organisms

Terrestrial

Data from previous EEB reviews indicate that Command 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. Thus, significant acute hazards to nontarget terrestrial organisms are not anticipated from use under the proposed exemption.

Data from hydrolysis, photolysis, and soil metabolism studies indicate that Command herbicide may persist in the environment. However, chronic hazards to avian and mammalian species are unlikely, as the probability of exposure is low, acreage to be treated is limited, and the herbicide will only be applied once per season.

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

Aquatic

Data from previous EEB reviews indicate that Command is slightly toxic to freshwater fish, with reported LC50's of 19 mg/L for rainbow trout and 34 mg/L for bluegill sunfish. A daphnid study indicated that Command is moderately toxic to aquatic invertebrates (LC50 = 5.2 mg/L). And the MATC for Command technical to Daphnia was determined to be between 2.20 and 4.38 mg/L.

The Exposure Assessment Branch determined the aquatic EEC for the soybean use to be 0.05 ppm, based on one application at 1.0 lb ai per acre. For the purposes of this review, EEB will assume a similar scenario for the proposed use. At the maximum rate (0.75 lb ai per acre), calculated aquatic EEC would be 0.0375 ppm. Based on these figures, EEB has determined that no acute hazards to populations of freshwater aquatic organisms are anticipated from use under the proposed exemption.

As noted above, environmental fate data indicate a potential for Command to persist in the environment. Under the conditions of the proposed Sec. 18, however, (single application, limited acreage), hazard to aquatic organisms is not expected.

Nontarget Plants

The Agency record on Command herbicide contains numerous reported incidents of adverse effects on nontarget plants. This potential to impact nontarget plants is reflected in the number of prominent warnings and precautions on the product label.

Data from a number of tests are required prior to registration of this product for any new agricultural use. See EEB review by Vaughan (EUP, field corn, Oct 31, 1988) for a listing of the data requirements. EEB will defer development of a final hazard assessment on nontarget plants, pending receipt of data from these tests. However, it may be concluded that soil incorporation will reduce the potential hazard to nontarget plants.

101.3 Endangered Species Considerations

On the basis of the above discussion, the only endangered organisms of concern would be plants. Information on file indicates that one endangered plant species, the swamp pink, may be associated with agricultural areas in New Jersey.

EEB does not have sufficient information to conduct a hazard assessment for this listed species. More detailed information is needed on the location of squash acreage and the locations of populations of swamp pinks. EEB defers to the US Fish and Wildlife Service on this matter. Application of Command herbicide to squash under this exemption should not be authorized until the USFWS has reviewed potential hazard to the swamp pink. FWS may be contacted at the following address:

US FWS
P.O. Box 534
705 White Horse Pike
Absecon, NJ 08201
(609) 646-9310

101.4 Adequacy of Toxicity Data

Available data are sufficient to assess hazard under the proposed Section 18, except for hazard to nontarget plants. Note that there are still a number of outstanding data gaps for data required to support a full registration on any agricultural crop.

103 Conclusions

EEB has reviewed the proposed emergency exemption for Command herbicide on squash in New Jersey. Based on the substantial volume of ecological effects data submitted by the registrant, EEB concludes that the proposed use presents minimal hazard to nontarget organisms other than plants. EEB is unable to complete

a risk assessment for plants because data from nontarget plant studies and drift studies are lacking.

One endangered plant species may be exposed to the herbicide via application to squash. EEB cannot assess the potential for hazard to the swamp pink with information currently at hand. EEB will defer to the FWS field office in Absecon, NJ, on this matter. Application under this proposed exemption should not be authorized until FWS has been notified and has had opportunity to conduct an endangered species review.

Allen W. Vaughan 5.9.89
Allen W. Vaughan, Entomologist
Ecological Effects Branch
EFED (H7507C)

Norman J. Cook for 5.9.89
James W. Akerman, Chief
Ecological Effects Branch
EFED (H7507C)

Norman J. Cook 5.9.89
Norman J. Cook, Supervisory Biologist
Ecological Effects Branch
EFED (H7507C)