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EEB REVIEW

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TYPE OF PRODUCT(S) : I,D,H,F,N,R,S Bioinsecticide

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. Rebecca Cool (41)

PRODUCT NAME(S) MVP Bioinsecticide

COMPANY NAME Texas Department of Agriculture

SUBMISSION PURPOSE Review a request for a Section 18 for the control of diamondback moth on cole crops in Texas.

SHAUGHNESSY NO.	CHEMICAL & FORMULATION(S)	% A.I.

EEB REVIEW

Pesticide Name: MVP Bioinsecticide

100.0.0 Submission Purpose and Label Information

100.1.0 Submission Purpose and Pesticide Use

The Texas Department of Agriculture is seeking an emergency exemption (Section 18) for the use of MVP Bioinsecticide to control diamondback moth in cole crops (broccoli, cabbage and cauliflower) in the counties of Hidalgo, Starr, Cameron and Willacy located in the Lower Rio Grande Valley. The exemption is being requested because this insect has developed resistance to the currently registered chemical insecticides and the other products containing Bt are not as effective. as MVP.

100.2.0 Formulation Information

MVP™ BIOINSECTICIDE - aqueous flowable based on the Cell Cap™ delivery system

ACTIVE INGREDIENT:
Delta endotoxin of *Bacillus thuringiensis* var. *kurstaki* (Btk).....10.0%

INERT INGREDIENTS.....90.0%

TOTAL.....100.0%

100.3.0 Application Methods, Directions, Rates

RATE: Use 2-3 quarts (0.45 to 0.675 lb. of Btk delta endotoxin) of MVP per acre. One gallon of this product contains 0.9 lb encapsulated delta endotoxin of Btk.

TIMING: For best results, make initial spray when eggs hatch and small larvae are first observed. Repeat treatments as necessary for season-long larval control. The interval between applications should be a minimum of 5 days.

ACREAGE AND QUANTITY: A total of 24,500 acres of cole crops is proposed for treatment under the terms of this exemption. Assuming that the total acreage would receive 10 applications of 3 quarts, the total quantity of formulated product needed will be 183,750 gallons, which corresponds to 165,375 lbs. of delta endotoxin.

MIXING: Fill spray tank 3/4 full with water and add recommended amount of this product to tank. Mix thoroughly while adding remainder of water. Agitate as necessary to maintain suspension and use immediately after mixing. Use spreaders-stickers according to manufacturer's recommendations to improve wetting and coverage on cole crops.

APPLICATION: Standard ground spray equipment calibrated to deliver a uniform spray pattern resulting in good coverage of the plant foliage should be utilized. MVP will be applied only when field-scouting indicates that at least one diamondback moth larva per 3 plants is present.

100.4.0 Target Organisms

The diamondback moth - *Plutella xylostella* (Linnaeus)

100.5.0 Precautionary Labeling

Clear pesticide destruction and container disposal directions are provided, as well as precautionary statements for children, humans, and applicator protection.

101.0.0 Hazard Assessment

101.1.0 Discussion

In 3 previous growing seasons, hundreds of acres of cabbage in the Lower Rio Grande Valley were not harvested because diamondback moth larvae had developed resistance to labeled chemical insecticides. It is estimated that at least 15% of the cabbage crop and 9% of the broccoli and cauliflower crop will be lost because the currently labeled compounds do not provide satisfactory control of this insect pest. MVP has also been shown to be twice as effective in reducing the number of diamondback larvae in test plots as the most effective labeled Bt compounds. Consequently, the monetary loss due to this insect in cabbage when treated with MVP would be expected to be half as much as with the currently labeled Bt compound.

101.2.0 Likelihood of Adverse Effects to Nontarget Organisms

Avian Studies

Both of the required avian studies have been submitted by the registrant and the guideline requirements have been met. The results of the studies indicate that no

acute avian hazard is expected from the proposed uses of this bioinsecticide.

Fish and Aquatic

The required aquatic studies have been submitted by the registrant and the guideline requirements have been met. The results of the freshwater fish and aquatic invertebrate toxicity tests indicate that no toxicity to aquatic species is expected from the proposed uses of this bioinsecticide.

Nontarget Plants

Two studies, vegetative vigor and seed germination/emergence, were submitted by the registrant. The results of the studies indicate no significant nontarget plant hazard is expected from the proposed uses of this bioinsecticide.

Nontarget Insect Testing

The required nontarget insect studies have been submitted by the registrant and the guideline requirements have been met. The results of the studies indicate no significant acute toxicity to predatory beneficial insects or the honey bee is expected from the proposed uses of this bioinsecticide.

Mammalian Wildlife

The Toxicology Branch review indicates that the a.i. of this product is nontoxic to rats at a 5050 mg/kg dose using the acute oral toxicity/pathogenicity test. A concern about toxicity demonstrated in early testing of this product was raised by the agency. This toxicity was related to the use of iodine in the formulated product. However, recent data has demonstrated that iodine did not cause any direct toxicity, and the observed toxicity was due to the massive doses of test material injected intravenously in the test animals. Also, a low exposure to mammalian wildlife is anticipated because of the small size and limited scope of this application.

101.3.0 Endangered Species Considerations

The use of MVP under the conditions of this exemption is not expected to pose any risk to endangered/threatened species. The small size and limited scope of the application is anticipated to result in only a low exposure of nontarget wildlife. In addition, no endangered/threatened lepidoptera are known to inhabit the Rio Grande Valley of Texas.

101.4.0 Adequacy of Toxicity Data

The registrant has addressed all of the data requirements outlined in the Pesticide Assessment Guidelines, Subpart M. Although all of the studies are useful for risk assessment, some are of the supplemental category because EPA does not, at the present time, have finalized guidance protocols for certain nontarget species. The studies submitted are, however, sufficient for assessing risk from the commercial use of a product containing a *Bacillus thuringiensis* delta endotoxin.

101.5.0 Adequacy of Labeling

The labeling is adequately prepared (see section 100.5).

103.0.0 Conclusions

The request for a section 18 exemption for the use of MVP Bioinsecticide on cole crops in Texas has been reviewed. The registrant has fulfilled all of the ecological effects testing requirements for the registration of this product. Based upon the available data, EEB concludes that the proposed uses described in this section 18 exemption request provide a minimal risk to nontarget organisms. One caution, however, is that the product should not be used in the habitat of endangered lepidoptera species.

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