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# MVP® II

## BIOINSECTICIDE

AQUEOUS FLOWABLE BASED ON THE CELLCAP® ENCAPSULATION SYSTEM

For control of certain caterpillar pests on cotton, vegetable, field, fruit, nut, vine, turf, flower, forest, ornamental, landscape tree and nursery crops.

### ACTIVE INGREDIENT

Delta endotoxin of *Bacillus thuringiensis* variety *kurstaki*  
encapsulated in killed *Pseudomonas fluorescens*.....20%

INERT INGREDIENTS.....80%

TOTAL.....100%

One gallon of this product contains 1.8 lbs of delta endotoxin of *Bacillus thuringiensis* variety *kurstaki* encapsulated in killed *Pseudomonas fluorescens*

**KEEP OUT OF REACH OF CHILDREN**

### CAUTION

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.  
See back panel or booklet for additional precautionary statements.

EPA Registration No. 53219 - 12

EPA Establishment No. 37429-GA-2 or 53219-WI-1  
Superscript corresponds to first number of lot number stamped on container.

MVP and CellCap are registered trademarks of Mycogen Corporation  
The CellCap encapsulation system is protected by U.S. patent nos. 4,695,462 and 4,695,455.

Net Contents:



MYCOGEN CORPORATION  
5501 Oberlin Drive  
San Diego, CA 92121  
1-800-745-7476

ACCEPTED

FEB 01 1996

Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended, for

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### PRECAUTIONARY STATEMENTS

**CAUTION - Hazards to Humans and Domestic Animals:** May cause skin sensitization reactions in certain individuals. Avoid contact with eyes, skin or clothing.

**Statement of Practical Treatment:** If in eyes, flush with plenty of water. Get medical attention if irritation persists. Wash thoroughly with soap and water after handling.

**Environmental Hazards:** Keep out of lakes, ponds or streams. Do not contaminate aquatic systems by cleaning of equipment or disposal of wastes.

**Personal Protective Equipment:** Applicators and other handlers must wear: long-sleeved shirt and long pants, waterproof gloves, and shoes plus socks.

Follow manufacturer's instructions for cleaning/ maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**User Safety Recommendations:** Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

For emergency medical information, call toll-free 1-800-228-5635 ext. 87

### GENERAL INFORMATION

**Mode of Action:** This product is a stomach poison against insects which must be ingested by targeted pests to be effective. Insects stop feeding after eating treated foliage. Death usually occurs 1 to 5 days later.

**Pre-harvest Interval:** This product can be applied up to the day of harvest (zero days to harvest).

**Insects Controlled:** This product controls the listed caterpillar (e.g. "larval") pests, including those resistant to synthetic chemical pesticides.

**Beneficial Insects:** This product does not harm beneficial insects (such as: honeybees, lacewings, parasitic wasps, ladybird beetles, predatory beetles and flies).

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, waterproof gloves, and shoes plus socks.

### NON - AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

#### Application Timing

- o Always target newly hatched or small larvae with spray applications so that insects are controlled before they cause extensive feeding damage. Make applications *before* older larvae tunnel or bore into buds, heads, stalks, or fruits and begin feeding inside the plant or fruit. Once larvae are protected inside the plant, they will be difficult to control with this, or other foliar applied products.
- o To determine optimal timing of first application, scout fields regularly for the appearance of eggs and newly hatched larvae. Make the first application as soon as eggs begin to hatch. Repeat applications as needed to maintain larval control.

#### Mixing and Application

- o For **chemigation** instructions, see page 10.
- o This product may be mixed with a refined emulsifiable oil for ULV application. Prior to application, **always** determine physical compatibility of materials to be sprayed by performing a jar test.
- o 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.
- o Thorough coverage of the foliage is **NECESSARY** for optimal performance of this product. All application techniques and equipment should result in uniform and complete coverage of all leaf surfaces on the plant. Control of target insects is achieved only when susceptible stages of the insect eat the treated plant. Skips, streaks or untreated foliage below the canopy surface will result in reduced pest control.
- o If rain or irrigation occurs on day of application, reapply this product.

- o For **water based conventional ground and aerial applications**, apply recommended amount of product in at least 2 gallons of water per acre. For most conventional ground application equipment, a minimum of 20 gallons of water per acre is necessary for good performance. Increasing water volume when crop growth is rapid and/or foliage is dense will improve crop coverage and the performance of this product.
- o When high volume applications (> 50 GPA) are used, do not apply to runoff as it will wash off MVP.
- o Use an approved spreader or spreader-sticker to improve coverage on hard to wet crops.

#### **Tank Mixtures**

- o Tank mixing this product with other pesticides or plant growth regulators should be governed by the most restrictive label instructions or precautions of any product in the mixture. This product should not be used with products that prohibit such use.
- o Always predetermine the compatibility of labeled tank mixtures of this product with the water carrier to be used during application by mixing small proportional quantities in advance of application.
- o When tank mixing, add individual formulations to the spray tank as follows: wettable powder, flowable, MVP, emulsifiable concentrate, water soluble liquid and finally adjuvants.
- o Maintain good agitation during the mixing and spraying operations to keep ingredients suspended.

#### **Recommended Application Rates**

Rates and frequency of applications will vary depending on intensity and type of larval infestation, and type of application equipment used. When conditions interfere with good coverage, the higher recommended rates should be used.

Light infestations	1 - 2 pints per acre
Moderate to heavy infestations	2 - 3 pints per acre
Extremely heavy infestations	3 - 4 pints per acre
For use in tank mixtures	.5 - 2 pints per acre

#### **Hand Held Spray Application Equipment**

- o Spray to wet but not to runoff. Time the application as recommended in Application Timing section.
- o For mixing small volumes, use .75 to 3 tablespoons (0.4 fl oz. to 1.5 fl oz.) of this product per gallon of water.
- o For mixing large volumes, use 1 - 4 pints of this product per 100 gallons of water.

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**VEGETABLES ( Leafy, Root and Tuber, Cucurbit and Brassica (cole) crops plus Artichokes, Asparagus, Okra and Watercress)**

<b>CROPS SUCH AS:</b>		<b>INSECT PESTS</b>
Artichoke	Melons (Crenshaw,	Alfalfa looper
Asparagus	cantaloupe, casaba,	Armyworms
Beet	honey ball, honeydew,	Artichoke plume moth
Bok choy	melon hybrid, muskmelon,	Beet armyworm
Broccoli	Persian, watermelon)	Cabbage looper
Broccoli raab	Napa cabbage	Cabbage webworm
Brussels sprouts	Okra	Celery leaf-tier
Cabbage	Onion	Corn earworm
Cardoni	Parsley	Cross striped cabbageworm
Carrot	Parsnip	Diamondback moth
Cauliflower	Pepper	European corn borer
Celeriac	Potato	Fall armyworm
Celery	Pumpkin	False celery leaf-tier
Chicory	Radish	Green cloverworm
Chinese broccoli	Rutabaga	<i>Heliothis/Helicoverpa</i> spp.
Chinese cabbage	Salsify	Hornworms
Cucumber	Shallot	Imported cabbageworm
Eggplant	Spinach	Loopers
Endive	Squash (Summer, Winter)	Melonworm
Escarole	Sugar beet	Omnivorous leafroller
Garlic	Sweet corn	Pickleworm
Greens (collard, mustard)	Sweet potato	Potato tuberworm
Green onion	Swiss chard	Rindworms
Horseradish	Tomato	Saltmarsh caterpillar
Kale	Turnip	Southwestern corn borer
Kohlrabi	Upland cress	Soybean looper
Leek	Watercress	Tobacco budworm
Lettuce	Yam	Tomato fruitworm
		Tomato pinworm
		Velvetbean caterpillar
		Webworms
		Yellowstriped armyworm

**SPECIAL INSTRUCTIONS - VEGETABLES**

For control of large larvae of armyworms, loopers and *Heliothis/Helicoverpa*, this product may be tank mixed with recommended insecticides to increase efficacy.

### SMALL FRUITS AND BERRIES

<u>CROPS SUCH AS:</u>	<u>INSECT PESTS</u>
Blackberry	Achema sphinx moth
Blueberry	Armyworms
Cane berry	Beet armyworm
Cranberry	Blackheaded fireworm
Currants	Blueberry leafroller
Grape	Blueberry spanworm
Raspberry	Brown spanworm
Strawberry	Cabbage looper
Boysenberry	Cherry fruitworm
Olallieberry	Fruitree leafroller
	Green fruitworm
	Grape berry moth
	Grape leaf folder
	Grape leaf skeletonizer
	Gypsy moth
	Loopers
	Obliquebanded leafroller
	Omnivorous leafroller
	Orange tortrix
	Raisin moth
	Saltmarsh caterpillar
	Tobacco budworm
	W. grape leaf skeletonizer

### NUTS, POME FRUIT, STONE FRUIT and CITRUS

<u>CROPS SUCH AS:</u>	<u>INSECT PESTS</u>
Almond	Amorbia
Apple	Citrus cutworm
Apricot	Codling moth
Cherry	Cutworms
Chestnut	Fall webworm
Citrus citron	Filbert leafroller
Filbert	Fruit tree leafroller
Grapefruit	Garden tortrix
Kumquat	Green fruitworm
Lemon	Gypsy moth
Lime	Hickory shuckworm
Nectarine	Navel orangeworm
Orange	Obliquebanded leafroller
Pecan	Omnivorous leafroller
Peach	Orangedog
Pear	Orange tortrix
	Oriental fruit moth
	Peach twig borer
	Pecan nut casebearer
	Redbanded leafroller
	Tent caterpillars
	Tufted apple budmoth
	Varigated leafroller
Pistachio	
Plum	
Prune	
Quince	
Tangelo	
Tangerine	
Walnut (English, black)	

# **LEGUMES**

<b>CROPS SUCH AS:</b>	<b>INSECT PESTS</b>
Beans	Armyworms
Phaseolus spp.	Beet armyworm
Lupinus spp.	Cabbage looper
Vigna spp.	Cutworms
Chick pea	Diamondback moth
Cowpea	Green cloverworm
Fava bean	<i>Heliothis/Helicoverpa</i> spp.
Guar	Loopers
Jackbean	Podworm
Lentil	Saltmarsh caterpillar
Peas	Soybean looper
Pigeon pea	Velvetbean caterpillar

## **FIELD CROPS (Cotton, Peanut, Tobacco, Cereal Grain, Forage Grass and Forage Legume crops plus Canola, Hops and Sugarcane)**

<b>CROPS SUCH AS:</b>	<b>INSECT PESTS</b>
Alfalfa (hay and seed)	Alfalfa caterpillar
Barley	Armyworms
Buckwheat	Beet armyworm
Canola (Rapeseed)	Cabbage looper
Clover	Corn earworm
Corn	Cotton bollworm
(Field, Sweet, Seed, Popcorn)	Cotton leafworm
Cotton	Cutworms
Cowpea	Diamondback moth
Cowpea hay	European corn borer
Hops	Fall armyworm
Jojoba	Green cloverworm
Lespedeza	Hornworms
Lupine	<i>Heliothis/Helicoverpa</i> spp.
Millet	Imported cabbageworm
Oats	Loopers
Pasture and range grasses (hay and silage)	Obliquebanded leafroller
Peanut	Omnivorous leaftier
Peanut hay	Podworms
Pea vine hay	Saltmarsh caterpillar
Rice	Southwestern corn borer
Rye	Soybean looper
Safflower	Sugarcane borer
Small grains (hay, grazing and silage)	Sunflower moth
Sorghum	Tobacco budworm
Soybean	Velvetbean caterpillar
	Webworms
	Yellowstriped armyworm

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## SPECIAL INSTRUCTIONS - CORN

Use this product when larvae are exposed and good coverage is possible. For control of armyworms, make the first application as soon as larvae begin to hatch or evidence of feeding in the whorls or leaves is observed. Begin treatment for corn earworm when upper ears begin silking. Multiple applications may be needed to control heavy infestations of armyworm or corn earworm.

## SPECIAL INSTRUCTIONS - COTTON and SOYBEANS

### RATES:

- o **General**  
Rates of application should be adjusted as pest pressure and crop foliage increase.
- o **Stand Alone**  
Use 2 to 4 pints of this product per acre for control of light infestations of loopers and armyworms. For control of other insects, use this product at rates of 1 to 4 pints per acre.
- o **Tank Mix**  
Use this product at .5 to 2 pints per acre with recommended ovicides and larvicides. Higher rates within this range may be required for optimum control of loopers and armyworms.

### APPLICATION:

Uniform and complete coverage of the foliage where larvae are feeding is essential to good control. For water based conventional ground and aerial applications, apply recommended amount of product in at least 2 gallons of water per acre. The addition of an emulsifiable oil is recommended to improve coverage of foliage.

This product may be mixed with a refined emulsifiable oil for ULV application. Prior to application, **always** determine physical compatibility of materials to be sprayed by performing a jar test.

## HERBS AND SPICES

<u>CROPS SUCH AS:</u>	<u>INSECT PESTS</u>
Arugula	Armyworms
Basil	Beet armyworm
Bay leaf	Cutworms
Camomile	Diamondback moth
Chives	European corn borer
Cilantro	Fall armyworm
Coriander	Green cloverworm
Dill	<i>Heliothis/Helicoverpa</i> spp.
Fennel	Imported cabbageworm
Marjoram	Loopers
Mint	Saltmarsh caterpillar
Oregano	
Peppermint	
Sage	
Tarragon	
Thyme	
Wintergreen	



**TURF, FLOWERS, BEDDING AND INDOOR PLANTS** (Including Greenhouse)-  
Production and Maintenance

<b><u>CROPS SUCH AS:</u></b>	<b><u>INSECT PESTS</u></b>
Bedding plants	Armyworms
Flowers	Cabbage looper
Ornamentals	Cutworms
Turf	Diamondback moth
	Ello moth
	Fall armyworm
	Loopers
	Oleander moth
	Omnivorous leafroller
	Omnivorous looper
	Plume moth
	Sod webworms
	Tobacco budworm

**FOREST, LANDSCAPE TREES SHRUBS**- Production and Maintenance

<b><u>CROPS SUCH AS:</u></b>	<b><u>INSECT PESTS</u></b>
Forest	Armyworms
Landscape trees	Blackheaded budworm
Nursery trees	Fall webworm
Shrubs	Fruitree leafroller
	Jack pine budworm
	Loopers
	Mimosa webworm
	Omnivorous leafroller
	Pine butterfly
	Tent caterpillar
	Tortrix

**SPECIAL INSTRUCTIONS - TURF**

This product can be used at a rate of 1 to 4 pints per 100 gallons of water or .5 to 2 ounces per 1000 square feet.

**SPECIAL INSTRUCTIONS - TREES AND FORESTS**

For mist blowers, mix specified amount in 10 gallons of water.

**TROPICAL AND OTHER FRUIT**

<b><u>CROPS SUCH AS:</u></b>	<b><u>INSECT PESTS</u></b>
Avocado	Amorbia
Banana	Cabbage looper
Dates	Citrus cutworm
Fig	Fall webworm
Kiwi Fruit	Indian meal moth
Persimmon	Loopers
Pomegranate	Omnivorous leafroller
Pineapple	Omnivorous looper
	Orange tortrix
	Raisin moth
	Tent caterpillars

**SPECIAL INSTRUCTIONS - Tropical and Other Fruit**

Application water volume should be sufficient to ensure good coverage of plant surfaces. For optimal results, use at least 50 gallons per acre. Concentrate application volumes are more effective than dilute.

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## CHEMIGATION

Apply this product only through sprinkler (including center pivot, lateral move end tow side (wheel) roll, traveler, big gun, solid seat, or hand move) irrigation systems. Do not apply this product through any other type of irrigation systems. For best results use irrigation levels of 0.15 to 0.5 inches of water per acre.

Shake the product container well or otherwise agitate the product before pouring or pumping into a nurse tank.

Product may be injected undiluted and does not require agitation in the nurse tank. Agitate the product again if shutdown period is longer than 36 hours.

If dilution of the product is required to obtain proper application rate, dilute in a 1 to 1 ratio of water to product and maintain continuous agitation during application. Agitate again after any shutdown period. Do not mix with nonemulsifiable oil.

When application is completed, thoroughly flush the injection system and sprinkler lines with water.

Do not apply when wind speed favors drift beyond the area intended for treatment.

In center pivot systems the application of this product must be made continuously for the duration of the water application. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from nonuniform distribution of the treated water.

If you have questions about calibration, you should contact your State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label - prescribed safety devices for public water supplies are in place. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly services an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump (e.g., diaphragm pump) such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

#### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**Storage:** Keep container unopened until use. Store unused product in original container. This product should be stored at temperatures between 35°F and 90°F.

**Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Container Disposal:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

#### LIMIT OF WARRANTY AND LIABILITY

This product conforms to the description on this label and is reasonably fit for the purpose set forth on this label when used according to the label directions and under the specified label conditions. THE MANUFACTURER DISCLAIMS ANY AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE. Buyer and all users assume all risks and responsibility for loss or damage if this product is used, stored, handled or applied under any condition not reasonably foreseeable or beyond the manufacturer's control, or not as explicitly set forth in this label. THE LIMIT OF THE MANUFACTURER'S LIABILITY SHALL BE THE PURCHASE PRICE FOR THE QUANTITY INVOLVED. IN NO EVENT SHALL THE MANUFACTURER BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.