PM-90 Reg # 53219-10 1911

MATTCH™

BIOINSECTICIDE

AQUEOUS FLOWABLE BASED ON THE CELLCAP® ENCAPSULATION SYSTEM

For control of caterpillar pests on vegetables, field crops, fruits, nuts, grapes, turf, stored products and ornamental and nursery crops.

ACTIVE INGREDIENT

A blend of CryIA(c) and CryIC derived* delta endotoxins of *Bacillus thuringiensis* encapsulated in killed *Pseudomonas fluorescens*	12%
INERT INGREDIENTS	88%
TOTAL	100%

One gallon of this product contains 1.05 lbs of delta endotoxins of *Bacillus thuringiensis* 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 - 10 EPA Establishment No. 37429-GA-2 ① or 53219-WI-1 ②

Superscript corresponds to first number of lot number stamped on container.

MATTCH is a trademark of Mycogen Corporation
CellCap is a registered trademark of Mycogen Corporation
The CellCap encapsulation system is protected by U.S. patent nos. 4,695,462 and 4,695,455.
*Patent pending

Net Contents:

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

ACCEPTED
NOV 0[illegible] 1995
Under the [illegible] Rodenticide [illegible], for the pesticide [illegible]
EPA Reg. No. 53219-10

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 an insect stomach poison which must be eaten by targeted pests to be effective. Within seconds of ingestion, the active ingredient is dissolved and instantly begins destroying the insect's digestive tract. Insects stop feeding immediately after eating this product. Death occurs 1 - 5 days later due to disintegration of the digestive tract and the resulting starvation.

Residual Activity: This product is based on the CellCap encapsulation system, which increases the residual activity of the active ingredient by protecting it from rapid environmental breakdown.

Tank Mix Compatibility: This aqueous-based formulation is physically compatible with a wide range of pesticides. Refer to **Tank Mixtures** section for specific use instructions.

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. The selected toxins in this product are highly potent against *Heliothis/Helicoverpa*, *Plutella*, and *Spodoptera* pest species.

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

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

- 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.

- 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 larvae begin to hatch. Repeat applications as needed to maintain larval control.

Mixing and Application

- 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.

- Thorough coverage of the foliage is NECESSARY for optimal performance of this product. Use sufficient volume of water to thoroughly wet upper and lower leaf surfaces. Do not apply to runoff. 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.

- If rain or irrigation occurs on day of application, reapply this product.

- For **water based conventional ground and aerial application**, 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 drop coverage and the performance of this product.

- Use an approved spreader or spreader-sticker to improve coverage on hard to wet crops.

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

- For **chemigation** instructions, see page 10.

Tank Mixtures

- When tank mixing, add individual formulations to the spray tank as follows: wettable powders, flowable, this product, emulsifiable concentrate, water soluble liquid, and finally adjuvants, including emulsifiable oils.

- Maintain good agitation during the mixing and spraying operations to keep ingredients suspended.

- For **first time** use of a tank mixture, always determine physical compatibility of materials to be applied by performing a jar test.

Recommended Application Rates

Rates and frequency of applications will vary depending on intensity and type of larval infesta ns, and type of application equipment used. For aerial or low volume applications or when conditions interfere with good coverage, the higher recommended rates should be used.

Stand Alone Applications	2-8 pints per acre
Tank Mix Applications (for caterpillar pests only)	1-4 pints per acre
Tank Mix Applications (for mixed population of caterpillar and non-caterpillar pests)	2-8 pints per acre

Hand Held Spray Application Equipment

- Spray to wet but not to runoff. Time the application as recommended in Application Timing section.

- For mixing small volumes, use 3 to 6 tablespoons (1.5 fl oz. to 3 fl oz.) of this product per gallon of water.

- For mixing large volumes, use 2-8 pints of this product per 100 gallons of water.

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VEGETABLES (Leafy, Root and Tuber, Cucurbit and Brassica (cole) plus Artichoke, Asparagus, Okra and Watercress)

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

SPECIAL INSTRUCTIONS - VEGETABLES

For control of large larvae of armyworms, loopers, and *Heliothis/Helicoverpa*, tank mix this product with recommended synthetic insecticides.

SMALL FRUITS AND BERRIES

CROPS SUCH AS:	INSECT PESTS:	
Blackberry	Achena sphinx moth	Grape leaf folder
Blueberry	Armyworms	Gypsy moth
Caneberry	Blueberry leafroller	Leafrollers
Cranberry	Blueberry spanworm	Loopers
Currant	Brown spanworm	Obliquebanded leafroller
Grape	Cabbage looper	Omnivorous leafroller
Raspberry	Carob moth	Orange tortrix
Strawberry	Cherry fruitworm	Roughskinned cutworm
	Cutworms	Saltmarsh caterpillar
	Fruit tree leafroller	Tobacco budworm
	Green fruitworm	Western grape leaf skeletonizer
	Grape berry moth	

NUTS, POME FRUIT, STONE FRUIT AND CITRUS

CROPS SUCH AS:		INSECT PESTS	
Almond	Peach	Cankerworm	Obliquebanded leafroller
Apple	Pear	Carob moth	Omnivorous leafroller
Apricot	Persimmon	Citrus cutworm	Orange tortrix
Cherry	Pistachio	Codling moth	Oriental fruit moth
Chestnut	Plum	Cutworms	Pandemis leafroller
Citrus citron	Pomegranate	Fall webworm	Peach twig borer
Filbert	Prune	Filbert leafroller	Pecan nut case bearer
Grapefruit	Quince	Filbert webworm	Redbanded leafroller
Kumquat	Tangelo	Filbertworm	Redhumped caterpillar
Lemon	Tangerine	Fruit tree leafroller	Roughskinned cutworm
Lime	Walnut (English, Black)	Garden tortrix	Speckled green fruitworm
Nectarine		Grape leaf folder	Tent caterpillar
Orange		Green fruitworm	Tufted apple budmoth
Pecan		Gypsy moth	Variegated leafroller
		Humped green fruitworm	Walnut caterpillar
		Leafrollers	Western tussock moth
		Navel orangeworm	

LEGUMES

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

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

CROPS SUCH AS:		INSECT PESTS:	
Alfalfa (hay and seed)	Peanuts	Alfalfa caterpillar	Obliquebanded leafroller
Barley	Peanut hay	Armyworms	Omnivorous leafroller
Buckwheat	Pea hay vine	Banded sunflower moth	Podworm
Canola (rapeseed)	Rice	Beet armyworm	Saltmarsh caterpillar
Clover	Rye	Cabbage looper	Southwestern corn borer
Corn	Safflower	Corn earworm	Soybean looper
(Field, Sweet,	Small grains (hay,	Cotton bollworm	Spotted cutworm
Seed, Popcorn)	grazing and silage)	Cotton leafworm	Sugarcane borer
Cotton	Sorghum	Cutworms	Sunflower headmoth
Cowpea	Soybean	Diamondback moth	Sunflower moth
Cowpea hay	Sudan grass	European corn borer	Tobacco budworm
Hops	Sugarcane	European skipper	Velvetbean caterpillar
Jojoba	Sunflower	Fall armyworm	Webworms
Lespedeza	Tobacco	Green cloverworm	Yellowstriped armyworm
Lupine	Trefoil	Hornworms	
Millet	Triticale	*Heliothis/Helicoverpa* spp.	
Oats	Velvet bean	Imported cabbageworm	
Pasture and range grasses (hay and silage)	Vetch	Leafrollers	
	Wheat	Loopers	

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 and highest labeled rates may be needed to control heavy infestations of armyworm or corn earworm.

SPECIAL INSTRUCTIONS - COTTON and SOYBEANS

RATES:

- **Stand Alone**

Use 2 to 8 pints of this product per acre for control of bollworms, budworms and most other caterpillar pests. Use 4 to 8 pints per acre for control of loopers and armyworms. Rates of application should be adjusted as pest pressure and crop foliage increase.

- **Tank Mix**

For caterpillar control, use this product at 1 to 4 pints per acre with recommended ovicides and larvicides. Higher rates within this range may be required for optimum control of loopers and armyworms. For control of mixed populations of caterpillar and non-caterpillar pests, use 2 to 8 pints per acre with recommended synthetic insecticides.

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.

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HERBS AND SPICES

CROPS SUCH AS:		INSECT PESTS
Anise	Fennel	Armyworms
Arugala	Marjoram	Beet armyworm
Basil	Mint	Cutworms
Bay leaf	Oregano	Diamondback moth
Chamomile	Peppermint	European corn borer
Chive	Sage	Fall armyworm
Cilantro	Tarragon	Green cloverworm
Coriander	Thyme	*Heliothis/Helicoverpa* spp.
Dill	Wintergreen	Imported cabbageworm
		Loopers
		Saltmarsh caterpillar

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

CROPS SUCH AS:	INSECT PESTS
Bedding plants	Armyworms
Flowers	Azalea moth
Ornamentals	Cabbage moth
Turf	Cutworms
	Diamondback moth
	Ello moth
	Fall armyworm
	Fiery skipper
	Io moth
	Leafrollers
	Loopers
	Oleander moth
	Omnivorous leafroller
	Omnivorous looper
	Sod webworm
	Tobacco budworm

FOREST, LANDSCAPE TREES and SHRUBS - Production and Maintenance

CROPS SUCH AS:	INSECT PESTS:
Forest	Armyworms
Landscape trees	Bagworm
Nursery trees	Blackheaded budworm
Shrubs	Browntail moth
	Buckmoth caterpillar
	California oakworm
	Cankerworm
	Douglas fir tussock moth
	Elm spanworm
	Fall webworm
	Fruit tree leafroller
	Greenstriped mapleworm
	Gypsy moth
	Jack pine budworm
	Mimosa webworm
	Pine butterfly
	Redhumped caterpillar
	Saddleback caterpillar
	Spruce budworm
	Tent caterpillar
	Tortrix
	Western tussock moth

SPECIAL INSTRUCTIONS - TURF

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

SPECIAL INSTRUCTIONS - TREES AND FORESTS

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

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TROPICAL AND OTHER FRUIT

CROPS SUCH AS:	INSECT PESTS:	
Avocado	Amorbia	Loopers
Banana	Banana skipper	Omnivorous leafroller
Date	Cabbage looper	Omnivorous looper
Fig	Carob moth	Orange tortrix
Kiwi Fruit	Citrus cutworm	Raisin moth
Persimmon	Fall webworm	Redhumped caterpillar
Pomegranate	Filbert webworm	Spanworm
Pineapple	*Gummosus comosae*	Tent caterpillars
	Indian meal moth	*Thecla basilides*
	Leafrollers	

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.

STORED AGRICULTURAL COMMODITIES

CROPS SUCH AS:	INSECT PESTS:
Birdseed	Almond moth
Condimental seed	Indian meal moth
Crop seed	Tobacco moth
Grains	
Herbs	
Peanut	
Popcorn	
Soybean	
Spices	
Sunflower seed	
Tobacco	

SPECIAL INSTRUCTIONS - STORED COMMODITIES

GRAINS AND SEEDS:

• SURFACE APPLICATIONS: Mix 2-4 pints of this product per 5-10 gallons of water for application to 500 sq ft of grain or seeds. Sprinkle solution onto surface of grain and mix into top four inches.

• AUGURED APPLICATIONS: Mix 2-4 pints of this product per 10 gallons of water. Apply 0.6 pints of this solution per bushel to top four inches of grain or seed as it is augured into storage bin.

• TOBACCO: Apply 0.8 - 2.4 fluid oz (approximately 1.5 - 5 tablespoons) in 1 quart of water per 100 lbs. of tobacco.

To protect bagged grain or seeds, apply spray mixture to the entire grain or seed mass. Mix thoroughly before bagging.

This product can be applied to stored commodities at anytime. Treated commodities may be used anytime
after treatment.

CHEMIGATION

Apply this product only through sprinkler (including center pivot, lateral move and 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 non uniform 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 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 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.

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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° 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.