Raven™ oil flowable bioinsecticide is a biological insecticide for the control of the Colorado potato beetle.

Active Ingredient:

Bacillus thuringiensis subspecies *kurstaki* strain EG7673

Coleopteran active toxin	8.00%
Lepidopteran active toxin[1]	2.00%
Inert Ingredients	90.00%
TOTAL	100.00%

0.80 lbs. active ingredient per gallon

Potency: 13,000 Colorado potato beetle (CPB) Units per milligram of product. Potency units should not be used to adjust use rates beyond those specified in the Directions for Use section.

[1]Not sufficient to provide commercial levels of lepidopteran control. The lepidopteran active toxin acts in synergy with the coleopteran toxin for CPB control. APPEARS TO

CAUTION

KEEP OUT OF REACH OF CHILDREN

STATEMENT OF PRACTICAL TREATMENT

If On Skin: Wash with plenty of soap and water. Get medical attention.

If In Eyes: Flush with plenty of water. Call a physician if irritation persists.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Water-proof gloves
- Shoes plus socks

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

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

Do not contaminate water when disposing of equipment washwaters.

STORAGE AND DISPOSAL

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

Storage: Store in a cool, dry place inaccessible to children.

Pesticide Disposal: Do not contaminate water when disposing of equipment washwaters. 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 incinerate, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

ACCEPTED

JAN 18 [illegible]

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 55638-27

ECOGEN

EPA Reg. No. 55638-27
EPA Est. No. 42761-MS-1(53)
(Subscript refers to last 2 digits of the lot number on container)
Net Contents: 2.5 U.S. Gallons

Ecogen Inc
2005 Cabot Blvd. West, P.O. Box 3023
Langhorne, PA 19047-3023
215/757-1590 800/220-2135

114

SPECIMEN LABEL

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 intervals. The requirements in this section 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 12 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
- Shoes plus socks

Preharvest Interval: There are no restrictions for applying RAVEN up to and on the day of harvest.

Mode of Action: After consuming a lethal dose of RAVEN, larvae will cease to feed, but may remain alive on foliage for several days before dying. Immediately after ingestion of RAVEN, larvae begin to move slowly, become discolored, shrivel and blacken prior to death.

MIXING INSTRUCTIONS

RAVEN may be applied with conventional ground, aerial or hand-held equipment with quantities of water sufficient to provide thorough coverage of infested plants. To obtain a suitable mixture with water, fill the mix tank or plane hopper with the desired quantity of water.

Mechanical or hydraulic agitation may be used to provide moderate circulation. For best results, shake container well, empty 1/2 of contents and reshake and empty remainder. Do not add water to container until completely empty.

If a sticker approved for use on growing crops is to be included, add after the addition of RAVEN. RAVEN should be mixed well and never added before introducing water into the tank. Maintain suspension while loading and spraying. Do not mix more RAVEN than can be used in a 24-hour period. Rinse and flush spray equipment thoroughly following each use. Dispose of rinsate as described in the Storage and Disposal section of this label.

APPLICATION INSTRUCTIONS

RAVEN is a biological insecticide for use against the coleopteran larvae listed in the **APPLICATION RATE TABLE**. Larvae must consume deposits of RAVEN to be affected. Always follow these directions:

- Careful scouting and early attention to infestations are essential to good control.
- Treat when larvae are young (early instars) and are actively feeding on foliage.
- Apply before extensive foliar damage has occurred.
- Thorough spray coverage is essential for good insect control.
- When insect infestations are heavy, use the higher label rates, shorten the spray interval and/or use larger total spray volume to improve spray coverage.
- Spray water/spray tank solutions should not exceed pH 8.0. If necessary, buffer water to near neutral (pH 7.0).
- For ground applications, use a spray volume of at least 20 gallons of water per acre. For aerial applications, use a spray volume of at least 5 gallons of water per acre.

APPLICATION RATE TABLE

Crop	Pest	Quarts/Acre[1]
Potatoes Tomatoes Eggplant	Colorado potato beetle[2]	0.5 to 3

[1] For ground applications, use a minimum spray volume of 20 gallons of water per acre. For aerial applications, use a minimum spray volume of 5 gallons of water per acre.

[2] Timing: Initial application should be made when 30% of observed egg masses have hatched. Repeat application at an interval sufficient to maintain control, usually 5-7 days depending upon plant growth, insect activity and weather conditions after spraying.

HAND HELD EQUIPMENT

When using hand held equipment, mix 6 teaspoons per gallon of water or 3 quarts per 100 gallons of spray solution. Spray to wet, but not to runoff.

PRECAUTIONS

- Do not use RAVEN in combination with any chlorothalonil based fungicide (eg. Bravo®, Echo®, Evade®, Terranil®, etc.) .
- Use caution when mixing RAVEN with other oil based products or surfactants as such combinations could increase the risk of phytotoxicity. If unsure test on a small area first.
- If any phytotoxicity occurs, discontinue use immediately.
- This product cannot be mixed with any product containing a label prohibition against such mixing. No label dosage rate should be exceeded. Application must be made in accordance with the more restrictive of label limitations and precautions.

CHEMIGATION

Apply this product only through center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set or hand move sprinkler systems. **Do not apply this product through any other type of irrigation system.** Crop injury or lack of effectiveness can result from nonuniform distribution of treated water.

If you have questions about calibration, contact your State Extension Service Specialist, 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 systems are in place.

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.

CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS:

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 serves 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 (RPZ), backflow preventer or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the 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.

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 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. 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.

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

SPRINKLER CHEMIGATION:

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.

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.

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

The active ingredient in RAVEN will settle in the tank and injection lines; adequate agitation must be provided before and during the injection period. Use only in systems that apply uniformly and have appropriate check valves. When application is complete, thoroughly flush the injection system and sprinkler lines.

MIXING RECOMMENDATIONS FOR CHEMIGATION:
Follow general **MIXING INSTRUCTIONS** and keep the ratio at three parts water to one part RAVEN. Also, provide mild uniform agitation throughout the solution but do not agitate excessively.

For undiluted injection for chemigation: flush and clean nurse tank, lines, screen canister and pump with a nonemulsifiable oil approved for use on growing crops until they are water free before and after application. Use a 25-mesh screen. Continue agitation during injection.

SPRAY VOLUME:
For chemigation use irrigation levels of 0.15 to 0.5 inches of water per acre. Up to 1 inch of irrigation water may be used, but efficacy may be reduced. The product should be applied continuously for the duration of the water application.

WARRANTY AND CONDITIONS OF SALE

Ecogen warrants that this product conforms to the description on this label and is reasonably fit for the purposes stated on this label when used in accordance with the directions on this label under normal conditions of use.

ECOGEN MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

If this product is defective, Buyer's exclusive remedy shall be the replacement of the product, or if replacement is impracticable, refund of the purchase price. In no case will Ecogen be liable for incidental, consequential or special damages resulting from the handling, storage or use of this product.