

# Crymax<sup>®</sup>

## BIOINSECTICIDE

CRYMAX<sup>®</sup> water dispersible granule bioinsecticide is a biological insecticide for the control of lepidopteran pests.

**ACTIVE INGREDIENT:**

*Bacillus thuringiensis* subspecies *kurstaki* strain EG7841 solids,  
spores and lepidopteran active toxins\* ..... 40.0%

**OTHER INGREDIENTS:** ..... 60.0%

**TOTAL:** ..... 100.0%

\*The percent active ingredient does not indicate product performance and potency measurements are not federally standardized.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

**MANUFACTURED BY:**  
Certis USA LLC  
9145 Guilford Road, Suite 175  
Columbia, MD 21046

**EPA Reg. No. 70051-86  
EPA Est. No. 70051-CA-1**

**CERTIS**

**Lot Number:**

**Net Contents:**

**Item Code: 112102**

**Package Code: 515104**

**ESL20200116  
Ver20200129**

This is a Specimen Label. It may not reflect the most-recent approved label for use in your state. Always refer to the label on the product packaging for approved use instructions. Please contact your Certis sales representative for more information.

### **FIRST AID**

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing the eye.

Call a poison control center or doctor for further treatment advice. Hotline number: 1-800-255-3924.

### **PRECAUTIONARY STATEMENTS**

#### **HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**CAUTION:** Causes moderate eye irritation. Avoid contact with 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
- Shoes plus socks
- Waterproof gloves
- Mixers/loaders and applicators must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins may cause allergic sensitization.

Follow manufacturer recommendations for cleaning and maintaining PPE. If no such instructions for washables exist, wash with detergent in warm water. Keep and wash separate from other laundry.

### **USER SAFETY RECOMMENDATIONS**

Users should:

- Wash hands thoroughly before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### **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 wash-waters. This product must not be applied aurally within ¼ mile of any habitats of threatened or endangered Lepidoptera. No manual application can be made within 300 ft. of any threatened or endangered Lepidoptera.

## 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, contact your State or Tribal 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 restrictive 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 entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry into treated areas that is permitted by the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, water, is:

- coveralls.
- waterproof gloves.
- protective eyewear.
- shoes plus socks.

**Preharvest Interval:** CRYMAX® may be applied to the crops listed in the APPLICATION RATE TABLE at any time, up to and on the day of harvest.

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

**Mixing Instructions:** CRYMAX® may be applied with conventional ground, aerial, or handheld application equipment with quantities of water sufficient to provide thorough coverage of infested plants. Do not apply this product through any type of irrigation system. To obtain a suitable mixture with water, add enough water to allow maximum agitation. With agitator running, slowly add in the CRYMAX®. Continue agitation. Add remainder of water and other spray materials and agitate until mixed. Maintain suspension while loading and spraying. Do not mix more CRYMAX® than can be used in a 24 hour period. Rinse and flush spray equipment thoroughly following each use. Do not contaminate water when disposing of equipment washwaters.

## **APPLICATION INSTRUCTIONS**

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

- Make applications when larvae are still small (early instars <1/2" in length) and actively feeding on foliage or other plant parts.
- Make applications before noticeable foliar damage occurs
- Thorough spray coverage is essential for good insect control.
- For ground applications, directed drop nozzles should be used for certain vegetable crops. For orchard applications, a spray volume of 100 gallons per acre and treatment of each orchard row is recommended.
- Do not use screens smaller than 50 mesh.
- For ground applications, use a minimum spray volume of 20 gallons per acre. For aerial applications, use a spray volume of at least 5 gallons per acre. (See cotton and soybeans for special instructions.)
- When insect infestations are heavy, use the higher label rates, shorten the spray interval, and/or use larger total spray volume to improve coverage.
- Applications should be repeated at an interval sufficient to maintain control, depending upon plant growth, insect pressure and weather conditions after spraying.
- Local conditions may affect the use of CRYMAX®. Consult your State Agricultural Extension Specialist for specific recommendations related to local crop protection problems.
- Spray water/spray tank solutions should not exceed pH 8.0. If necessary, buffer water to near neutral pH.

## **AERIAL APPLICATION**

Avoiding spray drift at the application site is the responsibility of the applicator. The interactions of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

## **HAND HELD EQUIPMENT**

When using hand held equipment, mix 2 teaspoons per gallon of water or 1-1/2 pounds per 100 gallons of spray solution. Spray to wet, but not to runoff.

## **TANK MIX**

CRYMAX® may be tank mixed with contact pesticides. Combinations of CRYMAX® with commonly used insecticides, fungicides, or other spray tank adjuvants are generally not deleterious to performance. It is advisable to test physical compatibility by mixing all components in a small container in proportionate quantities prior to mixing in a spray tank. 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 limitation and precautions.

For improved durability of spray deposits, a spreader/sticker approved for use on growing crops may be used for hard-to-wet crops such as cole crops.

## APPLICATION TIMING, RATES, CROPS, AND PESTS

Apply 0.5-2.0 lb of product/A. Refer to the Crop Tables for more specific rate instructions.

Sprays should target small larvae, from newly-hatched to 2<sup>nd</sup> instar. High label rates may be required to control larger larvae. Continue applying as part of a normal spray program until pest is adequately controlled. Apply when caterpillars are actively feeding. To be effective, CRYMAX<sup>®</sup> spray must be deposited at the larval feeding site. CRYMAX<sup>®</sup> can be applied by ground or air in water sufficient to insure thorough and even coverage. Thorough and uniform crop coverage is required for adequate insect control. Applications at higher water volumes have demonstrated improved control of targeted pests. Early morning or evening applications, when air is calm, are generally best for aerial applications.

**For Light Brown Apple Moth:** Apply when newly hatched larvae appear and before leaves are rolled or webbing is significant.

**For Banana Moth:** Drench bark to newly emergent shoots following pruning or apply to susceptible plant tissues when Banana Moth larvae are active.

**For European Grapevine Moth:** apply at blackhead egg stage or when larvae are newly hatched before leaves are rolled, or larvae have entered fruit.

**For European Pepper Moth:** Begin applications at egg lay and continue at 3-5 day intervals throughout larval feeding period.

Field Crops
<i>Canola/Rape seed</i>
<b>Pests:</b> Armyworms
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Coffee</i>
<b>Pests:</b> Banana moth
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Corn (field, sweet, popcorn, seed)</i>
<b>Pests:</b> Armyworms, Corn earworm, European corn borer, Southwestern corn borer
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Cotton*</i>
<b>Pests:</b> Beet armyworm**, Bollworm*, Cabbage looper, Cotton leaf perforator, Saltmarsh caterpillar, Soybean looper, Tobacco budworm, Yellowstriped armyworm**
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Evening primrose</i>
<b>Pests:</b> Diamondback moth
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Hemp</i>
<b>Pests:</b> Beet armyworm, Beet webworm, Corn earworm, Cotton square borer, European corn borer, Eurasian hemp borer, Saltmarsh caterpillar, Variegated cutworm, Yellow striped armyworm, Yellow woolybear, Zebra caterpillar
<b>Application Rate: 0.5-2.0 lb/A</b>

Field Crops
<i>Hops</i>
<b>Pests:</b> Armyworms, Loopers, Oblique banded leafroller, Omnivorous leaf-tier, Spotted cutworm
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Jojoba</i>
<b>Pests:</b> Loopers ( <i>Anacamptodes</i> spp.)
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Meadow foam</i>
<b>Pests:</b> Imported cabbageworm, Loopers
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Peanuts</i>
<b>Pests:</b> Corn earworm/Podworms, Green cloverworm, Loopers, Velvetbean caterpillar
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Rice</i>
<b>Pests:</b> Armyworms, Corn earworm, Green cloverworm, Loopers, Saltmarsh caterpillar, Velvetbean caterpillar
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Safflower</i>
<b>Pests:</b> Armyworms**, Loopers, Saltmarsh caterpillar
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Small grains (Barley, Oats, Rye, Wheat, etc.)</i>
<b>Pests:</b> Armyworms**, Loopers
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Sorghum</i>
<b>Pests:</b> European corn borer, Saltmarsh caterpillar, Velvetbean caterpillar
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Soybeans</i>
<b>Pests:</b> Corn earworm/Podworms, Green clover worm, Soybean looper, Velvetbean caterpillar
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Sunflowers</i>
<b>Pests:</b> Banded sunflower moth, Beet armyworm**, Corn earworm, Headmoth, Loopers, Sunflower moth
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Tobacco</i>
<b>Pests:</b> Corn earworm, Loopers, Tobacco budworm, Tobacco hornworm
<b>Application Rate: 0.5-2.0 lb/A</b>

**Notes:**

\* Use CRYMAX at 0.25 lb/A to control light to moderate populations of newly hatched tobacco budworm and bollworm in integrated pest management programs. Repeat treatments at four to five day intervals or as long as necessary until results are acceptable. Ovicides or synthetic pyrethroids can be combined with CRYMAX in accordance with the more restrictive of label limitations and precautions. No label dosage rates should be

exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing.

\*\*Combination of CRYMAX with a contact insecticide is recommended for infestations that include 4<sup>th</sup> and 5<sup>th</sup> instar larvae.

Fruit, Nut, and Vine Crops
Citrus:
<b>Pests:</b> Amorbia, Citrus cutworm, Fruittree leafroller, Omnivorous leafroller, Orangedog
<b>Application Rate: 0.5-2.0 lb/A</b>
Grapes:
<b>Pests:</b> Cherry fruitworm, European grapevine moth*, Grape berry moth, Grape leafroller, Grape leaf skeletonizer, Green fruitworm, Omnivorous leafroller, Orange tortrix, Saltmarsh caterpillar, Yellowstriped armyworm
<b>Application Rate: 0.5-2.0 lb/A</b>
Nuts:
<i>Almonds, Chestnuts, Filberts, Pecans, Pistachios, Walnuts</i>
<b>Pests:</b> Citrus cutworm, European grapevine moth*, Filbert leafroller, Filbert webworm, Fruittree leafroller, Hickory shuckworm, Navel orangeworm, Obliquebanded leafroller, Omnivorous leafroller, Pecan nut casebearer, Peach twig borer, Redhumped caterpillar, Roughskinned cutworm, Western tent caterpillar
<b>Application Rate: 0.5-2.0 lb/A</b>
Pome and Stone Fruits:
<i>Apples, Apricots, Cherries, Nectarines, Peaches, Pears, Plums, Prunes, Quince</i>
<b>Pests:</b> Cankerworm (Spring and Fall), Cherry fruitworm, Eastern tent caterpillar, European grapevine moth*, Fall webworm, Fruittree leafroller, Green fruitworm, Gypsy moth, Navel orangeworm, Obliquebanded leafroller, Oriental fruit moth, Pandemis leafroller, Peach twig borer, Redbanded leafroller, Redhumped caterpillar, Tortrix moth (orange and garden), Tufted apple moth, Variegated leafroller, Walnut caterpillar
<b>Application Rate: 0.5-2.0 lb/A</b>
Small Fruits and Berries:
<i>Blackberries, Blueberries, Boysenberries, Cranberries, Currants, Loganberries, Raspberries, Strawberries</i>
<b>Pests:</b> Achema sphinx moth, Armyworms, Blackheaded fireworm, Blueberry leafroller, Bollworms, Corn earworm, Cranberry girdler, European grapevine moth*, Fruittree leafroller, Grape berry moth, Gypsy moth, Loopers, Obliquebanded leafroller, Omnivorous looper, Tobacco budworm
<b>Application Rate: 0.5-2.0 lb/A</b>
Tropical and Other Fruits:
<i>Avocados</i>
<b>Pests:</b> Amorbia, Loopers, Orange Tortrix, Omnivorous leafroller, Omnivorous looper, Spanworm
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Bananas</i>
<b>Pests:</b> Banana skipper, Banana moth
<b>Application Rate: 0.5-2.0 lb/A</b>

Fruit, Nut, and Vine Crops
<i>Persimmons, Pomegranate</i>
<b>Pests:</b> Citrus cutworm, European grapevine moth*, Fall webworm, Filbert webworm, Omnivorous leafroller, Redhumped caterpillar, Tent caterpillar
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Pineapple</i>
<b>Pests:</b> <i>Gummosus-Batracheda commosae</i> , <i>Thecla-thecla basildes</i>
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Tropical fruits/subtropical fruits, Guava, Lychee, Sugar apple</i>
<b>Pests:</b> European grapevine moth*, Hornworms, Leafrollers, Loopers, Omnivorous leafroller
<b>Application Rate: 0.5-2.0 lb/A</b>

**Notes:**

\* Apply at blackhead egg stage or when larvae are newly hatched before leaves are rolled or larvae have entered fruit. Continue applications as necessary for larval control.

Herbs and Spices
<i>Basil, Chives, Cilantro, Dill, Oregano, Peppermint, Thyme</i>
<b>Pests:</b> Alfalfa looper, Armyworms, Bollworms, Corn earworm, Diamondback moth, European corn borer, Green cloverworm, Imported cabbageworm, Loopers, Saltmarsh caterpillar
<b>Application Rate: 0.5-2.0 lb/A</b>

Vegetable and Cole Crops
<i>Artichokes, Arugula, Asparagus, Beans, Beets, Bok choy, broccoli, Brussels sprouts, Cabbage, Cardoni, Carrots, Cauliflower, Celery, Celery, Chickpeas, Chicory, Chinese cabbage, Collards, Cucumber, Cucurbits, Dry bulb onions, Eggplants, Escarole, Endive, Garlic, Green onions, Greens (Beets, China, Dandelion, Mustard, Turnip), Horseradish, Kale, Kohlrabi, Lentils, Leeks, Lettuce (Head, Leaf, Romaine), Malanga, Melons (Cantaloupe, Crenshaw, Honeydew, Muskmelon, Watermelon, etc.), Napa, Okra, Olives, Onion, Parsley, Parsnips, Peas, Peppers, Potatoes, Pumpkins, Radishes, Rutabaga, Salsify, Shallots, Soybean foliage, Spinach, Squash, Sugar beets, Sweet potatoes, Swiss chard, Tomatoes, Turnips</i>
<b>Pests:</b> Alfalfa looper, Armyworms*, Artichoke plume moth, Beet armyworm*, Bollworms, Cabbage budworm, Cabbage looper, Celery leaf-tier, Corn earworm, Cross-striped cabbageworm, Diamondback moth**, European corn borer, European grapevine moth, Green cloverworm, Imported cabbageworm, Light-brown apple moth***, Melonworm, Omnivorous leafroller, Pickleworm, Rindworm complex, Saltmarsh caterpillar, Soybean looper, Tobacco budworm, Tomato fruitworm, Tomato hornworm, Tomato pinworm, Velvetbean caterpillar, Yellowstriped armyworm*
<b>Application Rate: 0.5-2.0 lb/A</b>

**Notes:**

\* Recommended rate is 1.0–1.5 pounds/acre unless tank-mixed with contact insecticide.

\*\* CRYMAX® will control Bt resistant and susceptible diamondback moth.

\*\*\* All crops.

<b>Pasture and Hay Crops</b>
<i>Alfalfa (hay &amp; seed), Pasture (grasses &amp; hay), Silage</i>
<b>Pests:</b> Alfalfa caterpillar, Armyworms, Beet armyworm*, Bollworms, Corn earworm, European skipper, Loopers*, Webworm, Yellowstriped armyworm*
<b>Application Rate: 0.5-2.0 lb/A</b>

**Notes:**

\* Product should be applied when early instar larvae first appear. If infestation persists, make a second application 7-10 days later. Combination of CRYMAX® with contact insecticide is recommended for control of 4th and 5th instar larvae.

<b>Commercial Flowers and Ornamental Plants</b>
<i>Bedding Plants</i>
<b>Pests:</b> Armyworms
<b>Application Rate: 1.0-2.0 lb/A</b>
<i>Container Stock</i>
<b>Pests:</b> Corn earworm, Ello moth (Hornworm), European grapevine moth*, Florida fern caterpillar, lo moth, Loopers, Oleander moth, Omnivorous leafroller, Omnivorous looper, Tobacco budworm
<b>Application Rate: 1.0-2.0 lb/A</b>
<i>Flowers (Greenhouse &amp; Field)</i>
<b>Pests:</b> Azalea moth
<b>Application Rate: 1.0-2.0 lb/A</b>
<i>Greenhouse Ornamentals</i>
<b>Pests:</b> Beet armyworm
<b>Application Rate: 1.0-2.0 lb/A</b>
<i>Greenhouse Vegetables</i>
<b>Pests:</b> Diamondback moth
<b>Application Rate: 1.0-2.0 lb/A</b>

**Notes:**

\* Apply at blackhead egg stage or when larvae are newly hatched before leaves are rolled or larvae have entered fruit. Continue applications as necessary for larval control.

<b>Forest, Nursery, and Shade Trees</b>
<i>Forest Trees</i>
<b>Pests:</b> Bagworm
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Nursery Trees</i>
<b>Pests:</b> Browntail moth, California oakworm, Douglas fir tussock moth, Elm spanworm, Fall webworm, Fruittree leafroller, Greenstriped mapleworm, Gypsy moth, Jack pine budworm, Mimosa webworm, Pine butterfly, Redhumped caterpillar, Saddleback caterpillar, Saddle prominent caterpillar, Spring and Fall cankerworm, Spruce budworm, Tent caterpillar, Tortrix, Western tussock moth
<b>Application Rate: 0.5-2.0 lb/A</b>
<i>Shade Trees</i>
<b>Pests:</b> Blackheaded budworm
<b>Application Rate: 0.5-2.0 lb/A</b>

<b>Turf</b>
<b>Pests:</b> Armyworms, Sod webworm, Tropical sod webworm
<b>Application Rate: 0.5-2.0 lb/A</b>

#### **STORAGE AND DISPOSAL**

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

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

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

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling if available or dispose of empty bag in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

#### **WARRANTY**

Certis USA, L.L.C. warrants that the material contained herein conforms to the description on the label and is reasonably fit for the purposes referred to in the directions for use. Timing and method of application, weather, watering practices, nature of soil, the insect problem, condition of the crop, incompatibility with other chemicals not specifically recommended, and other influencing factors in the use of this product are beyond the control of the seller. To the extent consistent with applicable law, buyer assumes all risks of use, storage or handling of this material not in strict accordance with directions given herein. **NO OTHER EXPRESS OR IMPLIED WARRANTY OF THE FITNESS OR MERCHANTABILITY IS MADE.**

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U.S. Patent Nos. 5441884, 5650308, 5776449, 5843744.