

# Deliver<sup>®</sup>

BIOLOGICAL INSECTICIDE

For Control of Listed Insect Pests on Listed Fruits, Nuts, Vegetables, Cotton, and Soybeans



FOR ORGANIC PRODUCTION



**ACTIVE INGREDIENT:**

*Bacillus thuringiensis*, subspecies *kurstaki* strain SA-12 solids, spores, and Lepidopteran active toxins<sup>†</sup> .....85.0%

**OTHER INGREDIENTS:** .....15.0%

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

<sup>†</sup>Potency: Minimum of 41 Billion International Units (BIU) per pound of product. The percentage active ingredient does not indicate product performance and potency measurements are not federally standardized.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

Refer to attached booklet for additional Precautionary Statements, First Aid Statements, Directions for Use, and Storage and Disposal Statements.

**MANUFACTURED BY:**

Certis USA LLC  
9145 Guilford Road, Suite 175  
Columbia MD 21046

**EPA Reg. No. 70051-69**

**EPA Est. No.**

**Net Weight:**



**Lot No / Container Batch Code:**

**Product Item Code:**

**Packaging Item Code:**

**Artwork Code:**

**Made in the USA**

**ESL20210318**

**Ver.20210409**

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 on skin or clothing**

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

**If in eyes**

- Hold eyes 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 eye.
- Call a poison control center or doctor for treatment advice.

**If inhaled**

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.
- Call a poison control center or doctor for treatment advice.

### **Hotline Number**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. Hot Line Number: 1-800-255-3924

## **PRECAUTIONARY STATEMENTS**

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

**CAUTION:** Harmful if absorbed through the skin or inhaled. Avoid breathing vapors or spray mist. Prolonged or frequently repeated skin contact may cause an allergic reaction in some individuals. Avoid contact with skin, eyes or clothing. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash clothing before reuse.

### **Personal Protective Equipment (PPE):**

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- A NIOSH approved particulate filtering facepiece respirator with any R, or P filter; OR a NIOSH-approved elastomeric particulate respirator with any R, or P filter; OR a NIOSH-approved powered air- purifying respirator with an HE filter. (Repeated exposures to high concentrations of microbial proteins can cause allergic sensitization).

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.

**User Safety Recommendations:**

Users should:

- Remove clothing 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.

**Engineering controls statements:**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR §170.607 (d) and (6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**ENVIRONMENTAL HAZARDS**

For Terrestrial Uses: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean water mark. Do not contaminate water when disposing of equipment washwaters.

This product must not be applied aerially within 1/4 mile of any habitats of endangered or threatened 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. This labeling must be in the possession of the user at the time of the pesticide application.

### **AGRICULTURAL USE REQUIREMENTS**

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.

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 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
- Shoes plus socks

### **GENERAL INSTRUCTIONS AND INFORMATION**

**DELIVER®** is a biological insecticide specific for the control of lepidopterous larvae (see Application Rates section). **DELIVER®** may be applied up to and on the day of harvest. For most consistent control, apply at first sign of newly hatched larvae (1<sup>st</sup> and 2<sup>nd</sup> instar larvae). Instructions for specific crops are located in ADDITIONAL INSTRUCTION sections under APPLICATION RATES.

Reapply as necessary under a pest management program that includes close scouting.

If rapid knockdown of heavy larvae or non-lepidopterous populations is necessary, include an effective contact insecticide in combination with **DELIVER®**.

For heavy larvae infestations, use the higher **DELIVER®** rate. During situations of dense foliage and/or rapid growth, shorter application intervals and increased water carrier volumes will provide better crop coverage and improve **DELIVER's®** performance.

#### **Spray Drift:**

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

#### **Tank Mixing:**

Use tank mixes only in states where the tank mix product and application site are registered. Read and follow all label directions for use for other pesticides used as tank mix partners with **DELIVER®** for specific application rates, application timing, and

precautions. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures.

Fill spray or mixing tank 3/4 full. Turn on agitation and pour **DELIVER®** into water while maintaining continuous agitation. Add other spray material (if any) and add balance of water. Agitate as necessary to maintain suspension. It is recommended that diluted sprays not remain in the tank for more than 48 hours. **DELIVER®** is formulated to provide desirable coverage and adherence to leaf surfaces. Additional adjuvants, spreaders, or stickers may be added to improve product performance, especially under heavy dew or rainy conditions. Combinations with commonly used insecticides, fungicides, or other spray tank adjuvants are generally not deleterious to **DELIVER®** if the mix is used promptly. Before mixing in the spray tank, test physical compatibility by mixing all components in a small container in proportionate quantities.

#### **APPLICATION VOLUMES**

**DELIVER®** 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.

## INSECTS CONTROLLED

Alfalfa caterpillar	Almond moth	Armyworm	Artichoke plume moth	Bagworm
Banana skipper	Banana moth	Beet armyworm	Blueberry leafrollers	Blueberry spanworm
Bollworm	California oak moth	Cherry fruitworm	Citrus cutworm	Codling moth
Corn Earworm	Cotton Leafworm	Cotton leaf perforator	Cutworm (various)	Diamondback moth
Douglas-fir tussock moth	Elm spanworm	European corn borer	European grapevine moth	European pepper moth
Fall cankerworm	Fall webworm	Filbert webworm	Fruit tree leafroller	Grape Berry moth
Grape leaffolder	Grapeleaf skeletonizer	Green cloverworm	Green fruitworm	Gypsy moth
Hornworms	Imported cabbageworm	Jack pine budworm	Light brown apple moth	Loopers (various)
Mimosa webworm	Naval orangeworm	Obliquebanded leafroller	Omnivorous leafroller	Omnivorous leaftier
Orangedog	Orange tortrix	Oriental fruit moth	Peach twig borer	Pecan nut casebearer
Redbanded leafroller	Redhumped caterpillar	Rindworm complex (various)	Roughskinned cutworm	Saltmarsh caterpillar
Sod webworm	Southwestern corn borer	Spotted cutworm	Spring cankerworm	Spruce budworm
Tent caterpillar	Tobacco budworm	Tobacco hornworm	Tomato fruitworm	Tomato pinworm
Tropical sod webworm	Tufted apple bud moth	Variegated leafroller	Velvetbean caterpillar	Western tussock moth

**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:** Apply at egg lay and continue at 3-5 day intervals throughout larval feeding period.

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

**For All Other Pests (Listed Above):** 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, **DELIVER®** spray must be deposited at the larval feeding site. **DELIVER®** 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.

### **Rate Selection Considerations:**

Application rates are typically given as a range:

- Use **Lower rate ranges** when tank mixing with contact insecticides labeled for larvae control or under conditions of light larvae infestations or when uniformly small larvae are present.
- Use **Medium rate ranges** when multiple larvae life stages are present, continuous egg hatches are occurring or young or light armyworm infestations exist.
- Use **Upper rate ranges** for heavy larvae infestations, mature (larger) larvae or for moderate to heavy infestations of armyworm, bollworm or other difficult to control larvae species.

Use application rate amount of **DELIVER®** in water sufficient to insure thorough coverage depending on type of crop, application equipment and requirements of state regulations. Low volume applications may be used, but proper application equipment must be used to insure adequate coverage. Thorough and uniform crop coverage is required for adequate insect control.

### **APPLICATION RATES**

<b>CROPS</b>	<b>DELIVER® LBS./ACRE</b>
<b>FIELD CROPS</b>	
<b>Root and Tuber Vegetables:</b> <b>Sugar Beets</b> Apply as necessary to maintain control.	0.25-2.0
<b>Legume Vegetables (Succulent or Dried):</b> <b>Including Beans, Peas, Lentils, Soybeans</b> Apply as necessary to maintain control.	0.25-2.0
<b>Foliage of Legume Vegetables:</b> <b>Including Plant Parts of Any Legume Vegetable Included in the Legume Vegetables that Will be Used as Animal Feed</b> Apply as necessary to maintain control.	0.25-2.0
<b>Cereal Grains – Except Barley, Corn, Oats, Rye, Wheat:</b> <b>Including Rice, Sorghum</b> Apply as necessary to maintain control.	0.25-2.0
<b>Cereal Grains – Barley, Oats, Rye, Wheat:</b> Apply as necessary to maintain control.	0.5-1.5
<b>Cereal Grains – Corn:</b> <b>Including Field Corn (Fresh, Sweet, Dried), Pop Corn, Seed Corn</b> Make initial application when economically damaging populations exist. Repeat as necessary to maintain control. Applications must be made to early instars prior to entering the ear or plant.	0.5-1.5
<b>Forage, Fodder and Straw of Cereal Grains – Except Barley, Corn, Oats, Rye, Wheat:</b> <b>Including Forage, Fodder, Stover, and Straw of Rice, Sorghum</b> Apply as necessary to maintain control.	0.25-2.0
<b>Forage, Fodder and Straw of Cereal Grains – Barley, Oats, Rye, Wheat</b> Apply as necessary to maintain control.	0.5-1.5

CROPS	DELIVER® LBS./ACRE
<b>Forage, Fodder and Straw of Cereal Grains – Corn</b> Make initial application when economically damaging populations exist. Repeat as necessary to maintain control. Applications must be made to early instars prior to entering the ear or plant.	0.5-1.5
<b>Grass, Forage, Fodder, and Hay Group:</b> <b>Including Sudan Grass and other Forage, Fodder, Stover, and Hay of any Grass <i>Gramineae/Poaceae</i> family (either green or cured) except sugarcane and those included in the cereal grains group</b> Under conditions of rapid plant growth and rapidly increasing armyworm populations (10 larvae or greater per 180° sweep) use the highest rate. Use a contact insecticide in combination with <b>DELIVER®</b> if 4th and 5th instars of multiple larval species are present in the crop and continuous egg laying is occurring.  The addition of a spreader sticker to <b>DELIVER®</b> may provide improved performance.	0.25-1.5
<b>Nongrass Animal Feeds (Forage, Fodder, Straw, and Hay):</b> <b>Including Alfalfa (Hay and Seed), Hay Crops, and Other Nongrass Forage, Fodder, and Straw Crops</b> Under conditions of rapid plant growth and rapidly increasing armyworm populations (10 larvae or greater per 180° sweep) use the highest rate. Use a contact insecticide in combination with <b>DELIVER®</b> if 4th and 5th instars of multiple larval species are present in the crop and continuous egg laying is occurring.  The addition of a spreader sticker to <b>DELIVER®</b> may provide improved performance.	0.25-1.5
<b>Oilseed – Except Cottonseed, Jojoba, Safflower, Sunflower:</b> <b>Including Canola, Evening Primrose, Rapeseed, Cultivars, Varieties, and/or Hybrids of These</b> Apply as necessary to maintain control.	0.25-1.5
<b>Oilseed – Cottonseed:</b> <b>Including Cultivars, Varieties, and/or Hybrids of These</b>  <u><b>Including Arizona and California</b></u>  <b>Early and Mid-Season</b> Repeat as necessary throughout season to maintain control. If egg-laying frequency indicates future moderate to heavy larval populations, time application spray to coincide with the 2nd instar larvae. During periods of high temperatures, larvae will progress through 1st and 3rd instars very rapidly and early application timing is necessary for control.  <b>DELIVER®</b> spray must be deposited at the larvae feeding site. When plant cover is dense and larvae are feeding in the lower 2/3 portion of the plant, aerial application of <b>DELIVER®</b> may not provide adequate control.  For the control of light to moderate infestations, apply at first sign of egg-laying or newly-hatched larvae (1st instar larvae).	0.25-1.5



CROPS	DELIVER® LBS./ACRE
<p><b><u>Except Arizona and California</u></b>  <i>Helicoverpa zea</i> (Bollworm, Tomato Fruitworm, Corn Earworm) and <i>Heliothis virescens</i> (Tobacco budworm)</p> <p><b>Early Season</b>  Begin applications when at least 50% of plants are at pinhead square stage and <i>Helicoverpa zea</i> or <i>Heliothis virescens</i> are present at damaging levels. If <i>Helicoverpa zea</i> is the predominant species or if larvae populations are high, use a higher rate or tank mix with a labeled ovicide (see below).</p> <p><b>Mid-Season</b>  Repeat as necessary throughout season to maintain control. Time application at peak egg hatch or 1st instar larvae. If egg laying is heavy and constant over a three-to-five day period, time application when eggs laid on the first day have developed into 2nd instar larvae. During periods of high temperature, larvae will progress through 1st and 3rd instars very rapidly and early application timing is necessary for control. Continue applications as needed based on field scouting up to pyrethroid spray window.</p> <p><b>DELIVER®</b> spray must be deposited at the larval feeding site. When plant cover is dense and larvae are feeding in the lower 2/3 portion of the plant, aerial application of <b>DELIVER®</b> may not provide adequate control.</p> <p>For added control of <i>Helicoverpa zea</i> and <i>Heliothis virescens</i>, tank mix <b>DELIVER®</b> with a labeled ovicide, such as amitraz (0.125-0.25 lb a.i./acre), methomyl (0.125 lb a.i./acre), profenofos (0.25 lb a.i./acre), or thiodicarb (NOT FOR CALIFORNIA) (0.125 lb a.i./acre). For added control of pyrethroid resistant <i>Heliothis virescens</i>, include <b>DELIVER®</b> as a tank mix partner with pyrethroid applications.</p> <p><i>Spodoptera exigua</i> (Beet armyworm)</p> <p>Apply when <i>Spodoptera exigua</i> population densities are damaging. Time application when the majority of the larvae population is in the egg-hatch to 3rd instar stage. If populations are dense, use a higher rate.</p> <p><b>DELIVER®</b> spray must be deposited at the larval feeding site. When the plant canopy is dense, for best control tank mix <b>DELIVER®</b> with a labeled larvicide, such as chlorpyrifos (0.25-1.0 lb a.i./acre), methomyl (0.33-0.75 lb a.i./acre), profenofos (0.5-1.0 lb a.i./acre), or thiodicarb (NOT FOR CALIFORNIA) (0.6-0.9).</p>	<p>0.25-1.5</p> <p>0.25-1.5</p> <p>0.50-1.5</p>
<p><b>Oilseed – Jojoba:</b>  <b>Including Cultivars, Varieties, and/or Hybrids of These</b>  Apply in a minimum of 50 gallons of water per acre by ground equipment or a minimum of 10 gallons of water by aerial equipment. Thorough coverage of foliage is essential and dictates the minimum spray volumes necessary.</p>	<p>0.5-1.5</p>
<p><b>Oilseed –Safflower, Sunflower:</b>  <b>Including Cultivars, Varieties, and/or Hybrids of These</b>  Apply as necessary to maintain control.</p>	<p>0.25-2.0</p>
<p><b>Cotton:</b></p>	

CROPS	DELIVER® LBS./ACRE
<p data-bbox="203 235 959 264"><b>Including Cultivars, Varieties, and/or Hybrids of These</b></p> <p data-bbox="203 302 656 331"><b><u>Including Arizona and California</u></b></p> <p data-bbox="203 369 513 399"><b>Early and Mid-Season</b> Repeat as necessary throughout season to maintain control. If egg- laying frequency indicates future moderate to heavy larval populations, time application spray to coincide with the 2nd instar larvae. During periods of high temperatures, larvae will progress through 1st and 3rd instars very rapidly and early application timing is necessary for control.</p> <p data-bbox="203 604 1187 701"><b>DELIVER®</b> spray must be deposited at the larvae feeding site. When plant cover is dense and larvae are feeding in the lower 2/3 portion of the plant, aerial application of <b>DELIVER®</b> may not provide adequate control.</p> <p data-bbox="203 739 1187 802">For the control of light to moderate infestations, apply at first sign of egg-laying or newly-hatched larvae (1st instar larvae).</p> <p data-bbox="203 840 621 869"><b><u>Except Arizona and California</u></b></p> <p data-bbox="203 873 1187 936"><i>Helicoverpa zea</i> (Bollworm, Tomato Fruitworm, Corn Earworm) and <i>Heliothis virescens</i> (Tobacco budworm)</p> <p data-bbox="203 974 391 1003"><b>Early Season</b> Begin applications when at least 50% of plants are at pinhead square stage and <i>Helicoverpa zea</i> or <i>Heliothis virescens</i> are present at damaging levels. If <i>Helicoverpa zea</i> is the predominant species or if larvae populations are high, use a higher rate or tank mix with a labeled ovicide (see below).</p> <p data-bbox="203 1171 370 1201"><b>Mid-Season</b> Repeat as necessary throughout season to maintain control. Time application at peak egg hatch or 1st instar larvae. If egg laying is heavy and constant over a three-to-five day period, time application when eggs laid on the first day have developed into 2nd instar larvae. During periods of high temperature, larvae will progress through 1st and 3rd instars very rapidly and early application timing is necessary for control. Continue applications as needed based on field scouting up to pyrethroid spray window.</p> <p data-bbox="203 1474 1187 1570"><b>DELIVER®</b> spray must be deposited at the larval feeding site. When plant cover is dense and larvae are feeding in the lower 2/3 portion of the plant, aerial application of <b>DELIVER®</b> may not provide adequate control.</p> <p data-bbox="203 1608 1187 1810">For added control of <i>Helicoverpa zea</i> and <i>Heliothis virescens</i>, tank mix <b>DELIVER®</b> with a labeled ovicide, such as amitraz (0.125-0.25 lb a.i./acre), methomyl (0.125 lb a.i./acre), profenofos (0.25 lb a.i./acre), or thiodicarb (NOT FOR CALIFORNIA) (0.125 lb a.i./acre). For added control of pyrethroid resistant <i>Heliothis virescens</i>, include <b>DELIVER®</b> as a tank mix partner with pyrethroid applications.</p> <p data-bbox="203 1848 683 1877"><i>Spodoptera exigua</i> (Beet armyworm)</p>	<p data-bbox="1273 336 1382 365">0.25-1.5</p> <p data-bbox="1273 1041 1382 1071">0.25-1.5</p> <p data-bbox="1273 1243 1382 1272">0.25-1.5</p>

<b>CROPS</b>	<b>DELIVER® LBS./ACRE</b>
<p>Apply when <i>Spodoptera exigua</i> population densities are damaging. Time application when the majority of the larvae population is in the egg-hatch to 3rd instar stage. If populations are dense, use a higher rate.</p> <p><b>DELIVER®</b> spray must be deposited at the larval feeding site. When the plant canopy is dense, for best control tank mix <b>DELIVER®</b> with a labeled larvicide, such as chlorpyrifos (0.25-1.0 lb a.i./acre), methomyl (0.33-0.75 lb a.i./acre), profenofos (0.5-1.0 lb a.i./acre), or thiodicarb (NOT FOR CALIFORNIA) (0.6-0.9).</p>	0.50-1.5
<p><b>Hemp (Outdoor and Greenhouse)</b> Begin treatment as soon as possible after egg hatching. Apply as necessary to maintain control.</p>	0.25-2.0
<p><b>Hops</b> Begin treatment as soon as possible after hatching and before larvae are protected by leaf folds.</p>	0.5-1.5
<p><b>Mint</b> Apply as necessary to maintain control.</p>	0.25-2.0
<p><b>Peanuts</b> Apply as necessary to maintain control.</p>	0.25-2.0
<p><b>Tobacco</b> Apply as necessary to maintain control.</p>	0.25-1.5
<b>FRUIT, NUT &amp; VINE CROPS</b>	
<p><b>Cucurbit Vegetables:</b> <b>Including Cantaloupe, Crenshaw, Honeydew, Honey Balls, Muskmelons, Watermelons, and Cultivars, Varieties and/or hybrids of These</b> Apply at first sign of hatch before larvae enter fruit. Repeat as necessary to maintain control.</p>	0.25-1.5
<p><b>Citrus Fruit:</b> <b>Including Grapefruits, Lemons, Oranges, Pomelo, Tangelo, Tangerine, Cultivars, Varieties and/or hybrids of These</b> Use 50-600 gallons of water per acre when using ground equipment and 10 gallons of water minimum per acre by air. (<i>Amorbia</i> [Mexican leafroller] is suppressed only.)</p>	0.5-1.5
<p><b>Pome Fruits:</b> <b>Including Apples, Pears, and Cultivars, Varieties and/or hybrids of These</b> Apply when newly hatched larvae appear and before leaves are rolled. Continue applying as a part of the normal cover spray program until pest is adequately controlled. Apply when caterpillars are actively feeding (2nd-4th instars).</p>	0.5-2.0
<p><b>Stone Fruits:</b> <b>Including Apricots, Cherries, Nectarines, Peaches, Plums, Pluots, Prunes, and Cultivars, Varieties, and/or Hybrids of These</b> For leafrollers, start treating as soon as possible after hatching and before larvae are protected by leaf folds. Apply when caterpillars are actively feeding (2nd to 4th instar).</p> <p>Application timing is very important for good pecan nut casebearer</p>	0.25-2.0

CROPS	DELIVER® LBS./ACRE
<p>suppression. Consult your local university or extension agent for information concerning specific modeling that predicts egg lay, typical application dates, and scouting techniques for your area. <b>DELIVER®</b> must be present at egg hatch for best control. Make application when the majority of eggs are in the pink stage. Make two applications 7 days apart. If only one application is made, a minimum of 0.5 lb. should be applied.</p>	
<p><b>Berry and Small Fruit – Except Grapes, Strawberries: Including Blackberries, Blueberries, Boysenberries, Caneberries, Currants, Dewberries, Kiwi, Loganberries, Raspberries, and Cultivars, Varieties, and/or Hybrids of These</b></p> <p>Apply by ground equipment only. Begin treatment as soon as possible after hatching. For leafrollers, apply before larvae are protected by leaf folds.</p>	0.25-2.0
<p><b>Berry and Small Fruit – Grapes: Including Cultivars, Varieties, and/or Hybrids of These</b></p> <p>Start treating as soon as possible after hatching and before larvae are protected by leaf folds.</p>	0.5-2.0
<p><b>Berry and Small Fruit – Strawberries: Including Cultivars, Varieties, and/or Hybrids of These</b></p> <p>Apply as necessary to maintain control. In a tank mix with contact insecticides, use a minimum of 1/2 lb. of <b>DELIVER®</b> for the control of armyworm.</p>	0.25-1.5
<p><b>Tree Nuts: Almonds, Filberts (Hazelnuts), Pecans, Pistachios, Walnuts, and Cultivars, Varieties, and/or Hybrids of These</b></p> <p>For leafrollers, start treating as soon as possible after hatching and before larvae are protected by leaf folds. Apply when caterpillars are actively feeding (2nd to 4th instar).</p> <p>Application timing is very important for good pecan nut casebearer suppression. Consult your local university or extension agent for information concerning specific modeling that predicts egg lay, typical application dates, and scouting techniques for your area. <b>DELIVER®</b> must be present at egg hatch for best control. Make application when the majority of eggs are in the pink stage. Make two applications 7 days apart. If only one application is made, a minimum of 0.5 lb. should be applied.</p>	0.25-2.0
<p><b>Tropical and Subtropical Fruit, Edible Peel – Except Guava, Olives: Including Persimmons, and Cultivars, Varieties, and Hybrids of These Commodities</b></p> <p>For leafrollers, start treating as soon as possible after hatching and before larvae are protected by leaf folds. Apply when caterpillars are actively feeding (2nd to 4th instar).</p> <p>Application timing is very important for good pecan nut casebearer suppression. Consult your local university or extension agent for information concerning specific modeling that predicts egg lay, typical application dates, and scouting techniques for your area. <b>DELIVER®</b> must be present at egg hatch for best control. Make application when the majority of eggs are in the pink stage. Make two applications 7 days apart. If only one application is made, a minimum of 0.5 lb. should be applied.</p>	0.25-2.0
<p><b>Tropical and Subtropical Fruit, Edible Peel – Guava:</b></p>	0.25-2.0

<b>CROPS</b>	<b>DELIVER® LBS./ACRE</b>
<b>Including Cultivars, Varieties, and Hybrids of These Commodities</b> Apply as necessary to maintain control. Begin treatment as soon as possible after hatching and before larvae are protected by leaf folds. ( <i>Amorbia</i> [Mexican leafroller] is suppressed only.)	
<b>Tropical and Subtropical Fruit, Edible Peel – Olives:</b> <b>Including Cultivars, Varieties, and Hybrids of These Commodities</b> Apply as necessary to maintain control.	0.25-2.0
<b>Tropical and Subtropical Fruit, Inedible Peel – Except Avocados, Bananas, Lychee, Papaya, Sugar Apple:</b> <b>Including Pomegranates, and Cultivars, Varieties, and Hybrids of These Commodities</b> For leafrollers, start treating as soon as possible after hatching and before larvae are protected by leaf folds. Apply when caterpillars are actively feeding (2nd to 4th instar).  Application timing is very important for good pecan nut casebearer suppression. Consult your local university or extension agent for information concerning specific modeling that predicts egg lay, typical application dates, and scouting techniques for your area. <b>DELIVER®</b> must be present at egg hatch for best control. Make application when the majority of eggs are in the pink stage. Make two applications 7 days apart. If only one application is made, a minimum of 0.5 lb. should be applied.	0.25-2.0
<b>Tropical and Subtropical Fruit, Inedible Peel – Avocados, Lychee, Papaya Sugar Apple:</b> <b>Including Cultivars, Varieties, and Hybrids of These Commodities</b> Apply as necessary to maintain control. Begin treatment as soon as possible after hatching and before larvae are protected by leaf folds. ( <i>Amorbia</i> [Mexican leafroller] is suppressed only.)	0.25-2.0
<b>Tropical and Subtropical Fruit, Inedible Peel – Bananas:</b> <b>Including Cultivars, Varieties, and Hybrids of These Commodities</b> Hawaii only. Use calibrated ground equipment with adequate water to apply to point of runoff.	0.25-2.0
<b>Coffee</b> Apply as necessary to maintain control.	0.25-2.0
<b>VEGETABLE CROPS</b>	
<b>Root and Tuber Vegetables – Except Artichoke:</b> <b>Including Carrots, Celeriac, Chicory, Horseradish, Parsnips, Potatoes, Radishes, Rutabaga, Salsify, Sweet Potatoes, Table Beets, Turnip Root, Yams</b> Apply as necessary to maintain control.	0.25-1.5
<b>Root and Tuber Vegetables – Artichokes</b> For ground applications, apply in a minimum of 100 gal. of water per acre with a spray interval of 10 days or less.  To aid in resistance management of the artichoke plume moth, apply 0.5 lb/A in combination with a pyrethroid by ground or air. Use and follow all label directions of the tank mix partner regarding application, timing, gallonage, and schedules.	0.5-1.5
<b>Leaves of Root and Tuber Vegetables:</b>	0.25-1.5

<b>CROPS</b>	<b>DELIVER<sup>®</sup> LBS./ACRE</b>
<b>Including Carrots, Celeriac, Chicory, Celery, Parsnips, Potatoes, Radishes, Rutabaga, Salsify, Sweet Potatoes, Table Beets, Turnip Root, Yams</b> Apply as necessary to maintain control.	
<b>Bulb Vegetables:</b> <b>Including Onions (Dry Bulb, Green), Garlic, Leeks, and Cultivars, Varieties, and/or Hybrids of These</b> Apply as necessary to maintain control.	0.25-1.5
<b>Leafy Vegetables:</b> <b>Including Broccoli Raab (Rapini), Chinese Broccoli (Gai Lon), Chinese Cabbage, Collards, Greens (Dandelion, Turnip, Mustard, Beet, China, Rape), Kale, Lettuce (Endive, Escarole, Romaine, Head Lettuce, Butter Crunch, Leaf, etc.), Parsley, Spinach, Swiss Chard, Watercress, and Cultivars, Varieties, and Hybrids of these Commodities</b> Apply as necessary to maintain control.	0.25-1.5
<b>Brassica Head and Stem Vegetables:</b> <b>Including Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Chinese Cabbage, and Cultivars, Varieties, and Hybrids of these commodities.</b> Apply as necessary to maintain control.	0.25-1.5
<b>Legume Vegetables, Succulent or Dried:</b> <b>Including Beans (Green, Lima, Mung), Chickpeas (Garbanzo Beans), Peas</b> Apply as necessary to maintain control.	0.25-1.5
<b>Foliage of Legume Vegetables:</b> <b>Including Plant Parts of Any Legume Vegetable Included in the Legume Vegetables that Will be Used as Animal Feed</b> Apply as necessary to maintain control.	0.25-1.5
<b>Fruiting Vegetables:</b> <b>Including Eggplants, Okra, Peppers, Tomatoes, and Cultivars, Varieties and/or Hybrids of These</b> Apply as necessary to maintain control.	0.25-1.5
<b>Cucurbit Vegetables:</b> <b>Including Cucumbers, Pumpkins, Squash (Summer and Winter)</b> Apply as necessary to maintain control.	0.25-1.5
<b>Cereal Grains – Corn (Fresh, Sweet)</b> Apply as necessary to maintain control.	0.25-1.5
<b>Herbs and Spices:</b> <b>Including Basil, Cilantro (Coriander, Chinese Parsley), Dill, Marjoram, Mustard Seed, Parsley (Dried), Pepper, Oregano, Thyme</b> Apply as necessary to maintain control.	0.25-1.5
<b>Stalk, Stem, and Leaf Petiole Vegetables:</b> <b>Asparagus, Cardoon, Celery, Kohlrabi, and Cultivars, Varieties, and Hybrids of These Commodities</b> Apply as necessary to maintain control.	0.25-1.5
<b>Globe Artichoke</b> Apply as necessary to maintain control.	0.25-1.5
<b>NONFOOD CROPS</b>	
<b>Shade Trees and Ornamentals (including Roses)</b>	0.25-1.5

<b>CROPS</b>	<b>DELIVER® LBS./ACRE</b>
<p>Apply when leaf expansion reaches 40% to 50% as infestation warrants. If eggs hatch over a long period of time, or if reinfestation occurs, spray about 14 days after first application.</p> <p>Apply when most larvae are 3<sup>rd</sup> – 4<sup>th</sup> instar. Also consider the opening of the bud cap to ensure foliage exposure.</p> <p>Apply after eggs have hatched and early instar larvae are feeding on exposed foliage.</p>	
<p><b>Flowers and Ornamentals (Outdoor and Greenhouse)</b></p> <p><b>DELIVER®</b> may also be used on flowers and ornamentals outdoors and in the greenhouse at a rate of 0.25 – 1.50 lb. per 100 gallons of water for control of listed insects on this label</p>	
<p><b>Turf and Grass Seed Production</b></p> <p>Repeat as necessary throughout season to maintain control.</p>	0.50-1.5

#### **STORAGE AND DISPOSAL**

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

***Pesticide Storage:*** Store in original container in a cool, dry place inaccessible to children and pets and away from heat and direct sunlight. Protect from freezing. Storage at temperatures above 90°F may impair effectiveness.

***Pesticide Disposal:*** Wastes resulting from the use of this product must 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 LLC 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, 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. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, NO OTHER EXPRESS OR IMPLIED WARRANTY OF THE FITNESS OR MERCHANTABILITY IS MADE.

## **CHEMIGATION APPLICATIONS**

**DELIVER®** alone or in combination with other tank mixtures which are registered for sprinkler irrigation may be applied through irrigation systems.

Dilute the product in water following the label mixing directions. It may be premixed in a supply tank with water, fertilizer, or other appropriate tank-mixed agricultural chemicals. Agitation is necessary. Apply the pesticide continuously for the duration of the water application.

Apply this product only through sprinkler systems such as center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set, or hand move. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact 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 system 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.

## **OPERATING INSTRUCTIONS**

### **Sprinkler Irrigation**

1. The system must contain a functional check-valve, vacuum relief valve, and low pressure drain appropriately located on the irrigated pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check-valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operating 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. 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.
6. 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.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.



## **Chemigation Systems Connected to Public Water Systems**

1. Public water system means a system for the provision to the public of piped water of 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.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water 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.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check-valve to prevent the flow of fluid back toward the injection pump.
4. 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.
5. 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.
6. 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.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

## **CALIBRATION AND APPLICATION**

The following calibration and application techniques are provided for user reference, but do not constitute a warranty of fitness for application through sprinkler irrigation equipment. Users should check with state and local regulatory agencies for potential use restrictions before applying any agricultural pesticide through sprinkler irrigation equipment.

### **Center Pivot Irrigation Equipment (Use only with drive systems which provide uniform water distribution.)**

1. Determine the size of the area to be treated.
2. Determine the time required to apply 1/4-1/2 inch of water over the area to be treated when the system and injection equipment are operated at normal pressures recommended by the equipment manufacturer. Run the system at 80-95% of the manufacturer's rated capacity.
3. Using water, determine the injection pump output when operated at normal line pressure.
4. Do not use the end gun for applications of **DELIVER®** through Center Pivot Irrigation Equipment.
5. Determine the amount of **DELIVER®** required to treat the area covered by the irrigation system. (Refer to table for use rates.)
6. Add the required amount of **DELIVER®** all at once to sufficient water in the injection solution tank to meet the injection time requirements. (See **Mixing Instructions** section of this label.)

7. Maintain constant agitation in the injection solution tank during the injection period.
8. Inject **DELIVER®** at the end of the irrigation cycle in 1/4-1/2 inch of water or as a separate application to maximize the effectiveness of the insecticide.
9. Continue to operate the system until the **DELIVER®** solution has cleared the last sprinkler head.

#### **Solid Set, Hand Move, and Moving Wheel Irrigation Equipment**

1. Determine the acreage covered by the sprinklers.
2. Fill the injection solution tank with water and adjust flow rate to use the contents over a 20 to 30-minute interval.
3. Determine the amount of **DELIVER®** required to treat the area covered by the irrigation system.
4. Add the required amount of **DELIVER®** into the same quantity of water used to calibrate the injection period. (See **Mixing Instructions** section of this label.)
5. Operate the system at the same pressure and time interval established during the calibration.
6. Maintain constant agitation in the injection solution tank during the injection period.
7. Inject **DELIVER®** at the end of the irrigation cycle in 1/4-1/2 inch of water or as a separate application to maximize the effectiveness of the insecticide.
8. Stop injection equipment after the treatment is completed. Continue to operate the system until the **DELIVER®** solution has cleared the last sprinkler head.