DiPel® ES
BIOLOGICAL INSECTICIDE
EMULSIFIABLE SUSPENSION

Active Ingredient: Bacillus thuringiensis, subsp. kurstaki, strain ABTS-351, fermentation solids, spores, and insecticidal toxins

Other Ingredients: 76.3%

Total: 100.0%

Potency: 17,600 Cabbage Looper Units per mg of product or 64 billion Cabbage Looper Units per gal of product. The percent active ingredient does not indicate product performance and the potency measurements are not federally standardized.

**KEEP OUT OF REACH OF CHILDREN CAUTION**

E.P.A. Registration No. 73049-17
E.P.A. Est. No. 37362-IA-001

**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 first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

**HOTLINE NUMBER**

Have the product container and label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-6-VALENT (682-5365).

**NOTE TO PHYSICIAN**

Contains petroleum distillate – vomiting may cause aspiration pneumonia.

**PRECAUTIONARY STATEMENTS**

HAZARDS TO HUMANS (AND DOMESTIC ANIMALS) CAUTION

Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

Personal Protective Equipment

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category E on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:
- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, or nitrile rubber, or neoprene rubber or viton
- 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.

Mixers/loaders and applicators must wear a dust/mist filtering respirator meeting NIOSH standards of at least R-95, P-95, or P-100. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements in the Worker Protection Standards (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

**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 cleaning equipment or disposing of equipment washwaters.

This product must not be applied aerially within 1/4 mile of any habitats of endangered or threatened lepidoptera species. No manual application can be made within 300 feet 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. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**AGRICULTURAL USE REQUIREMENTS**

Use this product 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 box only apply to uses of this product that are covered by the Worker Protection Standard.

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. 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
- Chemical-resistant gloves, such as barrier laminate or nitrile rubber or neoprene rubber or viton
- 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. Do not enter treated areas without protective clothing until sprays have dried.

**MODE OF ACTION**

After eating a lethal dose of DiPel ES, larvae stop feeding within the hour, and will die within several days. Dying larva move slowly, discolored, then shrivel, blacken and die.

DiPel ES may be used in either the field or greenhouse for the control of any labeled pest.

**GENERAL INSTRUCTIONS**

DiPel ES is a highly-selective insecticide for use against listed caterpillars (larvae) of Lepidopterous insects. Close scouting and early attention to infestations is highly recommended. Larvae must eat deposits of DiPel ES to be affected. Always follow these directions:
- Treat when larvae are actively feeding (earlier stages) and before economic thresholds of damage have been exceeded.
- Larvae must be actively feeding on treated, exposed plant parts.
- Thorough spray coverage is needed to provide a uniform deposit of DiPel ES at the site of larvae feeding. For some crops directed drop nozzles by ground machine are required.
- Under heavy pest population pressure, use the higher label rates, shorten the spray interval, and/or increase spray volume to improve coverage.
- Tank mixes with a contact insecticide may enhance control.
- Repeat applications at an interval sufficient to maintain control, usually 3 to 14 days depending on plant growth rate, moth activity, rainfall after treating, and other factors. If attempting to control a pest with a single application, make the treatment when egg hatch is essentially complete, but before economic crop damage occurs.
- A spreader-sticker or surfactant which has been approved for use on growing and harvested crops should be added for hard-to-wet crops. (Not recommended for chemigation.)
- DiPel ES is a non-restricted use pesticide and does not require a restricted use permit for purchase or use.

**GROUND AND AERIAL APPLICATIONS**

DiPel ES may be applied in ground and aerial equipment with quantities of water sufficient to provide thorough coverage of infested plant parts. The amount of water needed per acre will depend on crop development, weather, application equipment, and local experience.

Do not spray wind speed favors drift beyond the area intended for use.

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

**Mixing Recommendations:** Important – do not add DiPel ES to the mix tank before introducing the desired quantity of water. Start the mechanical or hydraulic agitator to provide moderate circulation before adding DiPel ES. Add the desired volume of DiPel ES to the mix tank as a pre- commodation. Include rinse water from the container. Maintain the suspension while loading and spraying. Do not mix more DiPel ES than can be used in a 2-day period. Rinse and flush spray equipment thoroughly following each use. Selection of fluid to flush the application system will depend on what type of mixture was used during the application period. Use a strainer no finer than 50 mesh in conventional spray systems.

**CAUTION:**

DiPel ES should not be used in combination with Comit®, Bravo, Captitol, Captan (except seed) or Dyrene.

**Spray Volume Recommendations:** For conventional aerial applications use at least 2 gals of total volume per acre in water-based sprays, except in the Western U.S. where 5 to 10 gals is the usual minimum. For ground application, use at least 5 gals of volume per acre. For Ultra Low Volume (ULV) aerial applications, mix DiPel ES with water or cottonseed oil and apply in a total volume of 1.0 - 2.25 qts per acre as applied unulated.

**Use of DiPel ES on Field Corn, Seed Corn, Sweet Corn, Silage Corn or Popcorn**

**DiPel ES FOR CORN**

(All states except California)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Pest</th>
<th>Pts/Acre (Ground Equipment)</th>
<th>Pts/Acre (Aerial Application)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>European Corn Borer</td>
<td>1.5 - 2.5</td>
<td>1.5 - 2.5</td>
</tr>
<tr>
<td>Field Corn</td>
<td>Corn Borer</td>
<td>1.5 - 2.5</td>
<td>1.5 - 2.5</td>
</tr>
<tr>
<td>Seed Corn</td>
<td>Corn Borer</td>
<td>1.5 - 2.5</td>
<td>1.5 - 2.5</td>
</tr>
<tr>
<td>Sweet Corn</td>
<td>Corn Borer</td>
<td>1.5 - 2.5</td>
<td>1.5 - 2.5</td>
</tr>
<tr>
<td>Popcorn</td>
<td>Sillage Corn</td>
<td>1.5 - 2.5</td>
<td>1.5 - 2.5</td>
</tr>
<tr>
<td>Silage</td>
<td>Corn Borer</td>
<td>1.5 - 2.5</td>
<td>1.5 - 2.5</td>
</tr>
</tbody>
</table>

**For the control of any labeled pest.**
parts. This alteration in feeding behavior will hamper the effectiveness of DiPel ES. Contact State and Local Extensions for economic threshold and application recommendations.

B. Armyworm and Western Bean Cucumber

For control of armyworm, treat when plants first exhibit feeding signs in the whorl or mature leaves. Multiple applications at approximately 3- to 5-day intervals may be necessary when populations are heavy. High-spray gallonage (50 to 75 gals per acre) will improve coverage and control. DiPel ES may be used to control small armyworms on the Western Bean Cucumber (1st and 2nd instar) when populations are light and full coverage sprays are applied. Repeat treatments as necessary. If mature worms or heavy populations are present, a contact insecticide should be used to enhance control.

C. Corn Earworm

Treat every 1 to 3 days or at wider intervals depending on pest pressure, temperature and geographical location. Begin treatments when 5% of the upper ears show silk. When populations are heavy, treat first silk is seen and every 1 to 3 days thereafter until harvest.

TANK MIX DIRECTIONS FOR CONTROL OF CORN PESTS

DiPel ES can be mixed with estavetin (1.5EC), perme-thrin (25W, 3.2EC, 25WP), methomyl (90% water soluble powder, 24% liquid, 29% liquid) or methyl parathion (miconcapped 2 lbs/gal) for use on sweet corn against armyworms and corn earworm in accordance with the more restrictive label limitations and precautions. No label dosage rates should be exceeded.

Spray Volumes:

For aerial applications, use a minimum of 2 gals of total volume per acre in water-based sprays except in the Western U.S. where 5 to 10 gals is the usual minimum. For ground applications, use at least 5 gals of total volume per acre with 3 nozzles per row. For banded applications, use a minimum of 2 nozzles per row with ground sprayer or cultivator. Rates should not be less than 0.5 tsp/acre on a broadcast basis. For ULV applications, mix 1 to 2 pts 1st of 2 pts DiPel ES with 1 to 2.5 pts vegetable oil or diesel oil and apply in a total volume of 1 to 2.5 pts per acre. Adjust the sprayer system to deliver a fine droplet spectrum. Generally, rotary atomizers produce a finer droplet spectrum for ULV applications.

For ALL STATES EXCEPT CALIFORNIA

(For use in California, see California Crops Section of this label)

**Table of Insecticide:**

**Crop** | Pest | Pt/acre (Ground and Aerial Applications)
---|---|---
**Cotton** | Tobacco Budworm | 1.0 - 6.0
 | Cotton Bollworm | 1.0 - 6.0
 | Armyworm | 2.0 - 6.0
 | Looper | 1.0 - 6.0
 | Saltmarsh Caterpillar | 1.0 - 4.0

**Timing of Application:**

A. Armyworm

DiPel ES may be used to control small armyworms (1st and 2nd instar) when populations are light and full coverage sprays are applied. Repeat treatments as necessary. If mature worms or heavy populations are present a contact insecticide should be used to enhance control.

B. Tobacco Budworm

Use DiPel ES to control light to moderate populations of newly hatched worms in pest management programs. Use under close scouting when beneficial insects are active or building. Repeat treatments at 4- to 5-day intervals or as long as necessary and results are acceptable. DiPel ES can be mixed with Larvin on use for cotton against tobacco budworm and cotton bollworm in accordance with the more restrictive 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. DiPel ES may be used alone for Heliothis zea and Heliothis virescens control only on pre-blooming cotton where few or no eggs are present. If significant eggs are present, use only in combination with ovicidal rates of Larvin.

DiPel ES FOR PEANUTS

(All states except California)

**Table of Insecticide:**

**Crop** | Pest | Pt/acre (Ground and Aerial Applications)
---|---|---
**Peanut** | Green Cloverworm | 1.0 - 2.0
 | Looper | 1.0 - 2.0
 | Podworm | 1.0 - 4.0
 | Armillaries | 2.0 - 4.0
 | Velvetbean Caterpillar | 1.0 - 2.0

**Timing of Application:**

Podworm and Armyworm

This product can be used to control podworm and armyworms when populations are light to moderate and apply good spray coverage can be achieved. Use DiPel ES at 1 to 2 pts per acre (2 to 4 pts per acre for armyworm) when small larvae first appear. Applications should be made to coincide with egg lay by early instar larva. Under conditions of higher pressure and rapid plant development, the addition of a contact insecticide in combination with DiPel ES is recommended. Treatments should be repeated as necessary to maintain acceptable control.

DiPel ES FOR ALFALFA, HAY AND OTHER FORAGE CROPS

(All states except California)

**Table of Insecticide:**

**Crop** | Pest | Pt/acre (Ground and Aerial Applications)
---|---|---
**Alfalfa** (Hay and Seed) | Armillaries | 2.0 - 4.0
 | Looper | 1.0 - 2.0

**For Use in California — See the California Crops Section on this label.

**Application Timing:**

Armyworm

This product may be used to control small armyworms (1st and 2nd instar) when populations and full coverage sprays are applied. Repeat treatment as necessary. If mature worms or heavy populations are present a contact insecticide should be used to enhance control.

DiPel ES FOR SUNFLOWERS

(All states except California)

**Table of Insecticide:**

**Crop** | Pest | Pt/acre (Ground and Aerial Applications)
---|---|---
**Sunflower:** Sunflower Moth | 1.5 - 2.5
 | Banded Sunflower Moth | 1.5 - 2.5

**Timing of Application:**

For moderate pest pressure make a single application prior to 75% bloom. A second application, 5 days later, may be necessary to control severe infestations. Treat when larvae are exposed and small. In Texas, begin treatment when early instar larvae are present and no more than 20% of the heads are in bloom. Use a spray interval of 4 to 6 days for a total of 3 applications, if necessary, to reduce the worm population to an acceptable level, especially if continued egg deposition occurs during the period.

DiPel ES FOR OTHER CROPS

(All states except California)

**Table of Insecticide:**

**Crop** | Pest | Pt/acre (Ground and Aerial Applications)
---|---|---
**Hops** | Armillaries | 2.0 - 4.0
 | Looper | 1.0 - 2.0
**Legume Vegetables** | Looper | 1.0 - 2.0
 | Green Cloverworm | 1.0 - 2.0
 | Velvetbean | 1.0 - 2.0
 | Bean, Pea, | Caterpillar | 1.0 - 2.0
 | Lentil and | Podworm | 1.0 - 4.0
 | Soybean | Armillaries | 2.0 - 4.0
 | Soybean Looper | 1.0 - 4.0
 | Saltmarsh Caterpillar | 1.0 - 2.0
**Rangeland** | Rangeland Caterpillar | 0.5 - 1.0
**Small Grains** | Armillaries | 2.0 - 4.0
 | Variigated Cottworm | 1.0 - 2.0
 | Looper | 1.0 - 2.0
 | Barley, | Corn Earworm | 1.0 - 4.0
 | Sorghum | Webworm | 1.0 - 2.0
 | Wheat or Oats | 1.0 - 2.0
| Sugarcane | Grass Looper | 1.0 - 4.0
 | Fall Armillaries | 2.0 - 6.0
 | Sugar cane Borer | 2.0 - 6.0
 | Tobacco | Tobacco Budworm | 1.0 - 2.0
 | Hopworm | 0.5 - 1.0
 | Looper | 1.0 - 2.0

**Further Directions:**

- Use in 1 to 2 qts water per acre against 1st through 4th instar larvae.
- DiPel ES is used to control small armyworms, podworms and/or sugarcane borer (1st and 2nd instar) when populations are light and full spray coverage is applied. Repeat treatment as necessary. If mature worms or heavy populations are present, a contact insecticide should be used to enhance control.

**CALIFORNIA CROPS**

**Table of Insecticide:**

**Crop** | Pest | Pt/acre (Ground and Aerial Applications)
---|---|---
**Cotton** | Armillaries | 2.0 - 4.0
 | Looper | 1.0 - 2.0
**Alfalfa** (Hay and Seed) | Armillaries | 2.0 - 4.0
 | Looper | 1.0 - 2.0

- For the See the Section of this label for Further Use Directions.

- This product may be used to control small armyworms (1st and 2nd instar) when populations are light and full coverage sprays are applied. Repeat treatment as necessary. If mature worms or heavy populations are present a contact insecticide should be used to enhance control.

**For Small Spray Volumes:**

If Fine Use this Amount Per Gal
| 1 pt/acre or 100 gals | 1/2 tsp
| 1 pt/acre or 100 gals | 1 tsp
| 2 pts/acre or 100 gals | 2 tsp
| 4 pts/acre or 100 gals | 4 tsp

**STORAGE AND DISPOSAL**

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

**Storage:** Keep containers tightly closed when not in use. Do not store at temperatures greater than 100°F. Roll or shake the container before dispensing.

**Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water when disposing of equipment washwaters.

**Container Disposal:** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact Ag Container Recycling Council at 202-861-3144 or www.acrcycle.org. If recycling is not available purchase and dispose of the container in a sanitary landfill, or by other procedures approved by state and local authorities.

**NOTICE TO USER**

Seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning use of this product other than as indicated on the label. User assumes all risks of use, storage or handling not in strict accordance with accompanying directions.

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