

73049-8

2/12/2014

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FEB 12 2014

Ms. Maria Pilar Herrero
 Regulatory Affairs Manager
 Valent BioSciences Corporation
 870 Technology Way
 Libertyville, IL 60048-6316

Re: Valent BioSciences Corporation; DiPel® 2X Biological Insecticide Wettable Powder
 EPA Registration No. 73049-8
 Minor Label ("Fast Track") Amendment
 Submissions Dated 12/22/2010, 09/18/2013, 09/24/2013, 09/25/2013, 09/26/2013,
 01/15/2014, 01/28/2014, 02/07/2014, and 02/11/2014
 Decision No. 443824

Dear Ms. Herrero:

The U.S. Environmental Protection Agency (EPA) reviewed your request to amend the subject product registration, which included the following changes to the product label:

- 1) Correction of minor formatting inconsistencies and typographical errors.
- 2) Insertion of "Manufactured for:" in front of Valent BioSciences Corporation's name and address in accordance with 40 CFR § 156.10(c).
- 3) Insertion of "Net Weight."
- 4) Modification of the Hot Line Number in the First Aid box.
- 5) Modification of certain text in the Hazards to Humans and Domestic Animals section (changes emphasized):

"Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet."

CONCURRENCES

SYMBOL	7511P	7511P					
USERNAME	KAUSCH	Borgus					
DATE	02/11/2014	2/12/14					

Maria Pilar Herrero
EPA Registration No. 73049-8

- 6) Rearrangement of certain statements in the Hazards to Humans and Domestic Animals section to ensure that these statements are organized so that the routes of exposure of most concern, as supported by toxicity category classifications, are listed first (Chapter 7, Section III(D)(3) of the EPA's Label Review Manual – Revised July 2012).
- 7) Revision of the microbial pesticide dust mask statements to convey differences for uses that fall under the Worker Protection Standard and those that do not.
- 8) Removal of the following advisory statement from the User Safety Recommendations box because it is already present in the Hazards to Humans and Domestic Animals section as a mandatory statement:

“Wash hands before eating, drinking, chewing gum, using tobacco products or using the toilet.”
- 9) Modification of certain text in the Environmental Hazards section (changes emphasized):

“For terrestrial uses, except when applying aerially over the forest canopy. Do not apply directly to water, 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 or rinsate.”

“This product must not be applied aerially within 1/4 mile of any habitats of threatened or endangered lepidoptera.”
- 10) Modification of the following statement in the Directions for Use (changes emphasized):

“For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.”
- 11) Adjustment of text in the Storage and Disposal box to align with information presented in Chapter 13 of the EPA's Label Review Manual (Revised July 2013) and to account for the intended packaging of the product (i.e., HDPE pails with plastic bags inside and fiber drums with plastic bags inside).
- 12) Addition, modification and removal of several statements in the Directions for Use for clarification purposes (e.g., tank-mixing instructions and water use specifications for ground applications).
- 13) Revision of the crop group and commodity listings in accordance with 40 CFR § 180.41.
- 14) Removal of all postharvest uses (e.g., applications to soybean and tobacco) to continue meeting the requirements of the National Organic Program.

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- 15) Addition of "To the extent consistent with applicable law" to both sentences in the Notice to User section to align with information presented in Chapter 12, Section IX of the EPA's Label Review Manual (Revised November 2013).

All the changes referred to above, submitted in connection with registration under section 3(c)(5) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), are acceptable provided that you submit two (2) copies of your final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for further description of final printed labeling.

Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions. If you have any questions regarding this letter, please contact Ms. Jeannine Kausch by telephone (703-347-8920) or email (kausch.jeannine@epa.gov).

A stamped, accepted copy of the label is enclosed for your records.

Sincerely,



Kimberly Nesci, Chief
Microbial Pesticides Branch
Biopesticides and Pollution
Prevention Division (7511P)

Enclosures (2):

- DiPel® 2X Biological Insecticide Wettable Powder Stamped, Accepted Label
- A-79 Enclosure

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ACCEPTED

FEB 12 2014

**DiPel® 2X
BIOLOGICAL INSECTICIDE
WETTABLE POWDER**

Under the Federal Insecticide, Fungicide,
and Rodenticide Act, as amended, for
the pesticide registered under
EPA Reg. No. 73049-8

 **For Organic Production**

Active Ingredient:

Bacillus thuringiensis subsp. *kurstaki* strain ABTS-351 fermentation solids, spores, and insecticidal toxins.....58.2%
Other Ingredients.....41.8%
Total.....100.0%

Potency: 32,000 Cabbage Looper Units per mg of product or 14.52 billion Cabbage Looper Units per pound of product.

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

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

Manufactured for:
Valent BioSciences Corporation
870 Technology Way
Libertyville, IL 60048

Net Weight: _____

EPA Registration No. 73049-8
EPA Est. No. 33762-IA-1

Lot No.: _____

FIRST AID	
If in eyes	<ul style="list-style-type: none">• 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 eye.• Call a poison control center or doctor for treatment advice.
If on skin or clothing	<ul style="list-style-type: none">• 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.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-315-9819 (24 hours) for emergency medical treatment and/or transportation emergency information. For all other information, call 1-800-323-9597.	

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION**

Causes moderate eye irritation. Harmful if absorbed through the skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

Follow the 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.

Agricultural Use Requirements

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 can cause allergic sensitization.

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 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

IMPORTANT: When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

Non-Agricultural Use Requirements

Mixers/loaders and applicators not in enclosed cabs or aircraft 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 can cause allergic sensitization.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove clothing/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

For terrestrial uses, except when applying aurally over the forest canopy. Do not apply directly to water, 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 or rinsate.

This product must not be applied aurally within 1/4 mile of any habitats of threatened or endangered lepidoptera. 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 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 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 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
- Waterproof gloves
- 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.

Keep unprotected persons out of treated areas until sprays have dried.

STORAGE AND DISPOSAL

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

Pesticide Storage: Reclose containers of unused DiPel® 2X. Store in a dry place.

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:

[For DiPel® 2X that is packaged in HDPE pails with a plastic bag inside or in fiber drums with a plastic bag inside] Nonrefillable container. Do not reuse or refill this container. Completely empty bag by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then, offer for recycling if available or dispose of empty bag in a sanitary landfill, by incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. If outer pail or fiber drum is contaminated, dispose of it in the same manner as required for the bag.

APPLICATION DIRECTIONS

Days to Harvest: There are no restrictions on applying DiPel® 2X up to the time of harvest.

Sites: DiPel® 2X may be used for any labeled pest in both field and greenhouse uses.

DiPel® 2X 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® 2X to be affected. Always follow these directions:

- Treat when larvae are young (early instars) before the crop is extensively damaged.
- Larvae must be actively feeding on treated, exposed plant parts.
- Thorough spray coverage is needed to provide a uniform deposit of DiPel® 2X at the site of larval feeding. For some crop and pest combinations (i.e., grapeleaf skeletonizer, saltmarsh caterpillar, and omnivorous leafroller on berries and small fruit), directed drop nozzles by ground machine are required.
- Under heavy pest population pressure, use the higher label application rates, shorten the spray interval, and/or raise spray volume to improve spray coverage.
- 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 spray, make the treatment when egg hatch is essentially complete, but before extensive crop damage occurs.

- A spreader-sticker, which has been approved for use on growing crops, should be added for hard-to-wet crops, such as cole crops, or to improve weather-fastness of the spray deposits.
- DiPel® 2X may be tank mixed with other labeled insecticides to enhance control. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures. Do not mix DiPel® 2X with any product containing a label prohibition against such mixing. Do not exceed label dosage rates. Before mixing DiPel® 2X with other labeled products, including spreader-stickers, check for tank mix compatibility.

After eating a lethal dose of DiPel® 2X, larvae stop feeding within the hour, and will die within several days. Dying larvae move slowly, discolor, then shrivel, blacken and die.

DiPel® 2X may be applied in conventional ground or aerial equipment with quantities of water sufficient to provide thorough coverage of infested plant parts. The volume of water needed per acre will depend on crop size, weather, spray equipment, and local experience. For ground use, apply a minimum of 10 gallons per acre. For air use, apply at least 2 gallons of water per acre, except in arid areas where 5 to 10 gallons of water are required. Begin the season with low water volume and increase as the plant canopy increases to ensure complete coverage. Add water to the mix tank and provide moderate agitation. With agitating, add the required amount of DiPel® 2X. Continue agitation, and add other spray materials, if any. Add remaining water, if any, and agitate until fully mixed. Maintain the suspension with moderate agitation while loading and spraying. Do not mix more DiPel® 2X than can be used in a 12-hour period.

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.

For Smaller Spray Volumes:

<u>If Application Rate is</u>	<u>Use This Amount of DiPel® 2X Per Gallon of Water</u>	
1/4 lb Dipel® 2X/acre (crop) or 100 gals.water	1/2 tsp.	(0.04 oz)
1/2 lb Dipel® 2X./acre (crop) or 100 gals.water	1 tsp.	(0.08 oz)
1 lb Dipel® 2X/acre (crop) or 100 gals.water	2 tsps.	(0.16 oz)
2 lb Dipel® 2X/acre (crop) or 100 gals.water	4 tsps.	(0.32 oz)

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CHEMIGATION USE DIRECTIONS

ATTENTION: DiPel® 2X may be applied by chemigation ONLY in Florida and ONLY to the following crops: flowers, bedding plants, ornamentals, and greenhouse/shadehouse and outdoor nursery crops.

Apply this product only through sprinkler, including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move, irrigation systems. Do not apply this product through any other type of irrigation system. Do not connect an irrigation system (including greenhouse systems) used for pesticide applications to a public water system.

Spray Preparation

First, prepare a suspension of DiPel® 2X in a mix tank. Fill tank with 1/2 to 3/4 the desired amount of water. Start mechanical or hydraulic agitation. Add the required amount of DiPel® 2X, and then the remaining volume of water. Then, set the sprinkler to deliver a minimum of 0.1 to 0.3 inch of water per acre. Start sprinkler and uniformly inject the suspension of DiPel® 2X into the irrigation water line so as to deliver the desired application rate per acre. The suspension of DiPel® 2X should be injected with a positive displacement pump into the main line ahead of a right angle turn to ensure adequate mixing. Any questions on calibration should be directed to your State Extension Service Specialists, to equipment manufacturers or to other experts.

NOTE: When treatment with DiPel® 2X has been completed, further field irrigation over the treated area should be avoided for 24 to 48 hours to prevent washing the material off the crop.

Precautions for Applications Through Sprinkler Irrigation Systems

Maintain continuous agitation in the mix tank during mixing and application to ensure a uniform suspension.

Greater accuracy in calibration and distribution will be achieved by injecting a larger volume for a more dilute solution per unit time.

Crop injury, lack of effectiveness, or illegal residues in the crop can result from non-uniform distribution of treated water. 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. Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water.

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, when system connections or fittings leak, when nozzles do not provide uniform distribution or when lines containing the product must be dismantled and drained.

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APPLICATION INSTRUCTIONS/RATES FOR DIPEL® 2X

(One 1 pound bag treats 0.5 acres at application rate of 2 lb/A to 4 acres at application rate of 1/4 lb/A)

CROP OR CROP GROUP	PESTS	POUND/ACRE
<p>Vegetable, root and tuber (Crop group 1) Including: Arracacha; arrowroot; artichoke, Chinese; artichoke, Jerusalem; beet, garden; beet, sugar; burdock, edible; canna, edible; carrot; cassava, bitter and sweet; celeriac; chayote (root); chervil, turnip-rooted; chicory; chufa; dasheen (taro); ginger; ginseng; horseradish; leren; parsley, turnip-rooted; parsnip; potato; radish; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret; sweet potato; tanier; turmeric; turnip; yam bean; yam, true.</p>	<p>Loopers Omnivorous Leafroller Hornworms Imported Cabbageworm Diamondback Moth Green Cloverworm Webworm Saltmarsh Caterpillar Armyworms* Cutworms</p>	<p>1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 2 1/2 - 1</p>
<p>Vegetable, bulb (Crop group 3-07) Including: Chive, fresh leaves; chive, Chinese, fresh leaves; daylily, bulb; elegans hosta; fritillaria, bulb; fritillaria, leaves; garlic, bulb; garlic, great-headed, bulb; garlic, serpent, bulb; kurrat; lady's leek; leek; leek, wild; lily, bulb; onion, Beltsville bunching; onion, bulb; onion, Chinese, bulb; onion, fresh; onion, green; onion, macrostem; onion, pearl; onion, potato, bulb; onion, tree, tops; onion, Welsh, tops; shallot, bulb; shallot, fresh leaves; cultivars, varieties, and/or hybrids of these.</p>	<p>Loopers Omnivorous Leafroller Hornworms Imported Cabbageworm Diamondback Moth Green Cloverworm Webworm Saltmarsh Caterpillar Armyworms* Cutworms</p>	<p>1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 2 1/2 - 1</p>
<p>Vegetable, leafy, except brassica (Crop group 4) Including: Amaranth (Chinese spinach); arugula (roquette); cardoon; celery; celery, Chinese; celtuce; chervil; chrysanthemum, edible-leaved; chrysanthemum, garland; corn salad; cress, garden; cress, upland; dandelion; dock (sorrel); endive (escarole); fennel, Florence; lettuce, head and leaf; orach; parsley; purslane, garden; purslane, winter; radicchio (red chicory); rhubarb; spinach, New Zealand; spinach, vine; Swiss chard.</p>	<p>Loopers Omnivorous Leafroller Hornworms Imported Cabbageworm Diamondback Moth Green Cloverworm Webworm Saltmarsh Caterpillar Armyworms* Cutworms</p>	<p>1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 2 1/2 - 1</p>

CROP OR CROP GROUP	PESTS	POUND/ACRE
<p>Vegetable, brassica (cole) leafy (Crop group 5) Including: Broccoli; broccbli, Chinese (gai lon); broccoli raab (rapini); Brussels sprouts; cabbage; cabbage, Chinese (bok choy); cabbage, Chinese (napa); cabbage, Chinese mustard (gai choy); cauliflower; cavalo broccolo; collards; kale; kohlrabi; mizuna; mustard greens; mustard spinach; rape greens.</p>	<p>Loopers Omnivorous Leafroller Hornworms Imported Cabbageworm Diamondback Moth Green Cloverworm Webworm Saltmarsh Caterpillar Armyworms* Cutworms</p>	<p>1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 2 1/2 - 1</p>
<p>Legume vegetables (succulent or dried) (Crop group 6) Including: Bean (<i>Lupinus</i> spp.) (includes grain lupin, sweet lupin, white lupin, and white sweet lupin); bean (<i>Phaseolus</i> spp.) (includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean); bean (<i>Vigna</i> spp.) (includes adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, Crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlong bean); broad bean (fava); chickpea (garbanzo); guar; jackbean; lablab bean; lentil; Pea (<i>Pisum</i> spp.) (includes dwarf pea, edible-pod pea, English pea, field pea, garden pea, green pea, snow pea, sugar snap pea); pigeon pea; soybean; soybean (immature seed); sword bean.</p>	<p>Loopers Soybean Looper Green Cloverworm Velvetbean Caterpillar Armyworms* Podworms*</p>	<p>1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 2 1/2 - 1</p>
<p>Vegetable, fruiting, except cucurbits (Crop group 8-10) Including: African eggplant; bush tomato; bell pepper; cocona; currant tomato; eggplant; garden huckleberry; goji berry; groundcherry; martynia; naranjilla; okra; pea eggplant; pepino; nonbell pepper; roselle; scarlet eggplant; sunberry; tomatillo; tomato; tree tomato; cultivars, varieties, and/or hybrids of these.</p>	<p>Loopers Hornworm Tomato Fruitworm Variegated Cutworm Saltmarsh Caterpillar Armyworms* Pinworm</p>	<p>1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 2 1 - 2</p>

CROP OR CROP GROUP	PESTS	POUND/ACRE
<p>Vegetable, cucurbit (Crop group 9) Including: Chayote (fruit); Chinese waxgourd (Chinese preserving melon); citron melon; cucumber; gherkin; gourd, edible (includes hyotan, cucuzza, hechima, Chinese okra); <i>Momordica</i> spp. (includes balsam apple, balsam pear, bitter melon, Chinese cucumber); muskmelon (includes cantaloupe); pumpkin; squash, summer; squash, winter (includes butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash); watermelon.</p>	<p>Loopers Melonworms Rindworm complex Armyworms*</p>	<p>1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 2 </p>
<p>Fruit, citrus (Crop group 10-10) Including: Australian desert lime; Australian finger lime; Australian round lime; Brown River finger lime; calamondin; citron; citrus hybrids; grapefruit; Japanese summer grapefruit; kumquat; lemon; lime; Mediterranean mandarin; Mount White lime; New Guinea wild lime; orange, sour; orange, sweet; pummelo; Russell River lime; Satsuma mandarin; sweet lime; tachibana orange; Tahiti lime; tangelo; tangerine (mandarin); tangor; trifoliate orange; uniq fruit; cultivars, varieties, and/or hybrids of these.</p>	<p>Fruittree Leafroller Orangedog Citrus Cutworm****</p>	<p>1/2 - 2 1/4 - 1 1/2 - 2</p>
<p>Fruit, pome (Crop group 11-10) Including: Apple; azarole; crabapple; loquat; mayhaw; medlar; pear; pear, Asian; quince; quince, Chinese; quince, Japanese; tejocote; cultivars, varieties, and/or hybrids of these.</p>	<p>Redhumped Caterpillar Tent Caterpillars Omnivorous Leafroller Fall Webworm Walnut Caterpillar Cankerworms Gypsy Moth Variegated Leafroller Redbanded Leafroller Tufted Apple Budworm Fruittree Leafroller Filbert Leafroller Obliquebanded Leafroller Codling Moth Cutworms</p>	<p>1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2</p>

CROP OR CROP GROUP	PESTS	POUND/ACRE
Fruit, stone (Crop group 12) Including: Apricot; cherry, sweet; cherry, tart; nectarine; peach; plum; plum, Chickasaw; plum, Damson; plum, Japanese; plumcot; prune (fresh). • • • • •	Redhumped Caterpillar Tent Caterpillars Omnivorous Leafroller Fall Webworm Walnut Caterpillar Cankerworms Gypsy Moth Variegated Leafroller Redbanded Leafroller Tufted Apple Budworm Fruittree Leafroller Filbert Leafroller Obliquebanded Leafroller Codling Moth Cutworms	1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2

CROP OR CROP GROUP	PESTS	POUND/ACRE
<p>Berry and small fruit (Crop group 13-07) Including: Amur river grape; aronia berry; bayberry; bearberry; bilberry; blackberry (<i>Rubus</i> spp.) (includes Andean blackberry, arctic blackberry, bingleberry, black satin berry, boysenberry, brombeere, California blackberry, Chesterberry, Cherokee blackberry, Cheyenne blackberry, common blackberry, coryberry, darrowberry, dewberry, Dirksen thornless berry, evergreen blackberry, Himalayaberry, hullberry, lavacaberry, loganberry, lowberry, Lucretiaberry, mammoth blackberry, marionberry, mora, mures deronce, nectarberry, Northern dewberry, olallieberry, Oregon evergreen berry, phenomenalberry, rangeberry, ravenberry, rossberry, Shawnee blackberry, Southern dewberry, tayberry, youngberry, zarzamora, and cultivars, varieties and/or hybrids of these); blueberry, highbush; blueberry, lowbush; buffalo currant; buffaloberry; che; Chilean guava; chokecherry; cloudberry; cranberry; cranberry, highbush; currant, black; currant, red; elderberry; European barberry, gooseberry; grape; honeysuckle, edible; huckleberry; jostaberry; Juneberry (Saskatoon berry); kiwifruit, fuzzy; kiwifruit, hardy; lingonberry; maypop; mountain pepper berries; mulberry; muntries; native currant; partridgeberry; phalsa; pincherry; raspberry, black and red; riberry; salal; schisandra berry; sea buckthorn; serviceberry; strawberry; wild raspberry; cultivars, varieties, and/or hybrids of these.</p>	<p>Grapeleaf Skeletonizer (ground application only) : Grape Leafroller : Achema Sphinx Moth (Hornworm) : Saltmarsh Caterpillar : (ground application only) : Omnivorous Leafroller : (ground application only) : Loopers : Orange Tortrix : Oblique Banded Leafroller : Armyworms* : Tobacco Budworm : Grape Berry Moth :</p>	<p>1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 2 1/2 - 2 1/2 - 1</p>

CROP OR CROP GROUP	PESTS	POUND/ACRE
<p>Nut, tree (Crop group 14) Including: Almond; beech nut; Brazil nut; butternut; cashew; chestnut; chinquapin; filbert (hazelnut); hickory nut; macadamia nut; pecan; walnut, black and English.</p>	<p>Redhumped Caterpillar Tent Caterpillars Omnivorous Leafroller Fall Webworm Walnut Caterpillar Cankerworms Gypsy Moth Variegated Leafroller Redbanded Leafroller Tufted Apple Budworm Fruittree Leafroller Filbert Leafroller Obliquebanded Leafroller Codling Moth Cutworms</p>	<p>1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2</p>
<p>Grain, cereal (Crop group 15) Including: Barley; buckwheat; corn; millet, pearl; millet, proso; oats; popcorn; rice; rye; sorghum (milo); teosinte; wheat; wild rice.</p>	<p>Loopers Armyworms* Headworms</p>	<p>1/2 - 1 1/2 - 2 1/2 - 1</p>
<p>Grass forage, fodder, and hay (Crop group 17) Including: Any grass, <i>Gramineae</i> family (either green or cured) except sugarcane and those included in the cereal grains group, that will be fed to or grazed by livestock, all pasture and range grasses and grasses grown for hay or silage.</p>	<p>Loopers Alfalfa Caterpillar European Skipper (Essex Skipper) Armyworms*</p>	<p>1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 2</p>
<p>Nongrass animal feeds (forage, fodder, straw, and hay) (Crop group 18) Including: Alfalfa; bean, velvet; clover; kudzu; lespedeza; lupin; sainfoin; trefoil; vetch; vetch, crown; vetch, milk.</p>	<p>Loopers Alfalfa Caterpillar European Skipper (Essex Skipper) Armyworms*</p>	<p>1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 2</p>

CROP OR CROP GROUP	PESTS	POUND/ACRE
<p>Flowers, Bedding Plants and Ornamentals***</p> <p>(Note: Aerial application should be applied in a minimum of 5 gallons per acre)</p>	<p>Loopers Tobacco Budworm Omnivorous Looper Omnivorous Leafroller Diamondback Moth Armyworms* Ello Moth (Hornworm) Io Moth Oleander Moth Azalea Caterpillar</p>	<p>1/4 - 1/2 1/4 - 1/2 1/4 - 1/2 1/4 - 1/2 1/4 - 1/2 1/2 - 2 1/4 - 1/2 1/4 - 1/2 1/4 - 1/2 1/4 - 1/2</p>
<p>Fruit, tropical (grown in U.S.A.) Including: Anonna; banana/plantain; caimito; carambola (star fruit); guava; longan; sapodilla; papaya; passion fruit; mango; lychee; jakfruit; dragon fruit; mamey sapote; coconut; cherimoya; canistel; monstera; wax jambu; rambutan; pulasan; Pakistani mulberry; langsat; chempedak; durian; fig; pineapple; jaboticaba; mountain apples.</p>	<p>Banana Skipper Hornworm Leafrollers Loopers Omnivorous Leafroller Omnivorous Looper <i>Batrachedra comosae</i> (Hodges) Thecla Moth</p>	<p>1/2 - 1 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/4 - 1/2 1/4 - 1/2</p>
<p>Hops</p>	<p>Loopers Armyworms*</p>	<p>1/2 - 1 1/2 - 2</p>
<p>Malanga</p>	<p>Saltmarsh Caterpillar Armyworms*</p>	<p>1/2 - 1 1/2 - 2</p>
<p>Peanuts</p>	<p>Loopers Velvetbean Caterpillar Green Cloverworm Podworms*</p>	<p>1/2 - 1 1/2 - 1 1/2 - 1 1/2 - 1</p>
<p>Pomegranates</p>	<p>Redhumped Caterpillar Tent Caterpillars Omnivorous Leafroller Fall Webworm Walnut Caterpillar Cankerworms Gypsy Moth Variegated Leafroller Redbanded Leafroller Tufted Apple Budworm Fruittree Leafroller Filbert Leafroller Obliquebanded Leafroller Codling Moth Cutworms</p>	<p>1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2 1/2 - 2</p>

CROP OR CROP GROUP	PESTS	POUND/ACRE
Tobacco	Tobacco Budworm Hornworms Loopers	1/2 - 1 1/4 - 1/2 1/2 - 1
Turf	Sod Webworm	1 - 2
Water Cress	Loopers Armyworms* Diamondback Moth	1/2 - 1 1/2 - 2 1/2 - 1
GREENHOUSE/SHADEHOUSE AND OUTDOOR NURSERY		
Crops including, but not limited to: Vegetable, leafy, except brassica (Crop group 4); Vegetable, brassica (cole) leafy (Crop group 5); Vegetable, fruiting, except cucurbits (Crop group 8-10); Herbs and spices (Crop group 19)**	Loopers <i>Heliothis</i>	1/2 - 1 1/2 - 2

* DiPel® 2X may be used to control small armyworms and/or podworms (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.

** Use to control light to moderate populations of newly hatched worms in integrated pest management conditions. Repeat treatments at 4- to 5-day intervals as long as necessary and results are acceptable. Use in combination with ovicidal rates of labeled *Heliothis* ovicides.

*** DiPel® 2X may be applied by chemigation ONLY in Florida and ONLY to the following crops: flowers, bedding plants, ornamentals, and greenhouse/shadehouse, and outdoor nursery crops.

**** Apply to light to moderate populations of newly hatched worms.

DIPEL® 2X FOR TREES AND FORESTS

Crop	Pest	Pounds/100 Gallons (Ground Application)*	Pounds/Acre (Aerial Application)**
Forest, Shade, Sugar Maple Trees and Ornamentals	Gypsy Moth	1/4 - 3/4	1/2 - 1 1/2
	Bagworm	1/4 - 3/4	1/2 - 1 1/2
	Redhumped Caterpillar	1/4 - 3/4	1/2 - 1 1/2
	Spring & Fall Cankerworm	1/4 - 3/4	1/2 - 1 1/2
	Fall Webworm	1/4 - 3/4	1/2 - 1 1/2
	Elm Spanworm	1/4 - 3/4	1/2 - 1 1/2
	Tent Caterpillars	1/4 - 3/4	1/2 - 1 1/2
	California Oakworm	1/4 - 3/4	1/2 - 1 1/2
	Pine Butterfly	1/4 - 3/4	1/2 - 1 1/2
	Spruce Budworms	1/4 - 3/4	1/2 - 1 1/2
	Saddle Prominent Caterpillar	1/4 - 3/4	1/2 - 1 1/2
	Douglas Fir Tussock Moth	1/4 - 3/4	1/2 - 1 1/2
	Western Tussock Moth	1/4 - 3/4	1/2 - 1 1/2
	Fruittree Leafroller	1/4 - 3/4	1/2 - 1 1/2
	Blackheaded Budworm	1/4 - 3/4	1/2 - 1 1/2
	Mimosa Webworm	1/4 - 3/4	1/2 - 1 1/2
Jack Pine Budworm	1/4 - 3/4	1/2 - 1 1/2	
Saddleback Caterpillar	1/4 - 3/4	1/2 - 1 1/2	
Greenstriped Mapleworm	1/4 - 3/4	1/2 - 1 1/2	

*DiPel® 2X application rate for hydraulic sprayer. For mist blowers, mix the applicable amount of DiPel® 2X (pounds) in 10 gallons of water.

**For aerial application, use in one to five gallons of water depending on type and density of trees. For best results, spray systems that deliver droplet size of LESS THAN 150 microns should be used.

NOTICE TO USER

To the extent consistent with applicable law, seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning the use of this product other than as indicated on this label. To the extent consistent with applicable law, user assumes all risks of use, storage or handling not in accordance with accompanying directions.

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