

73049-8

8/6/2009

10f23



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Washington, D.C. 20460

August 6, 2009

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Doina Bujor
Regulatory Manager
Valent BioSciences Corp.
870 Technology Way
Libertyville, IL 60048

RE: Product Name: DiPel 2X Biological Insecticide
EPA Reg. No: 73049-8
Application for Label Notification Dated June 2, 2009 to Update Storage
and Disposal Language per PR Notice 2007-4

Dear Ms. Bujor:

The Biopesticides and Pollution Prevention Division is in receipt of your application for Notification under Pesticide Registration (PR) Notice 98-10 dated above. A preliminary screen of this request has been conducted for its applicability under PR Notice 98-10 and it has been determined that the action(s) requested falls within the scope of PR Notice 98-10. Our records have been duly noted, and the label submitted with this application has been stamped "Notification, received and reviewed" and will be placed accordingly in our records.

If you have any questions concerning this action, please feel free to contact Ms. Diana Hudson at (703) 308-8713 or email at HUDSON.DIANA@EPA.GOV.

Sincerely,

Sheryl K. Reilly

Sheryl K. Reilly, Ph.D., Chief
Microbial Pesticides Branch
Biopesticides and Pollution Prevention
Division (7511P)

20f23



Please read instructions on reverse before completing form.

Form Approved, UMB No. 2070-0080



United States
Environmental Protection Agency
Washington, DC 20460

<input type="checkbox"/>	Registration
<input type="checkbox"/>	Amendment
<input checked="" type="checkbox"/>	Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number 73049-8	2. EPA Product Manager Sheryl Reilly	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) DiPel 2X Biological Insecticide Wettable Powder	PM# 92	
5. Name and Address of Applicant (Include ZIP Code) Valent BioSciences Corporation 870 Technology Way Libertyville, IL 60048 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: <input checked="" type="checkbox"/> EPA Reg. No. _____ Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____	NOTIFICATION Date Reviewed: 8-6-09 Reviewed By: D. Hudson
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application	
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.	

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Notification of label per PR Notice 2007-4. This notification is consistent with the guidance in PR Notice 2007-4 and requirements of EPA's regulations at 40 CFR §§ 156.10, 156.140, 156.144, 156.146, and 156.156. NO other changes have been made to the labeling or the Confidential Statement of Formula for this product. (see next page)

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Metal	<input checked="" type="checkbox"/> Plastic
* Certification must be submitted		If "Yes" Unit Packaging wgt.	No. per container	If "Yes" Package wgt	No. per container
				<input checked="" type="checkbox"/> Paper	<input checked="" type="checkbox"/> Other (Specify) _____
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 0.5, 5, 10, 50kg		5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product		<input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled		<input type="checkbox"/> Other _____	

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Doina Bujor	Title Regulatory Manager	Telephone No. (Include Area Code) 847-968-4724
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped)
2. Signature 	3. Title Regulatory Manager	
4. Typed Name Doina Bujor	5. Date Jun 2, 2009	

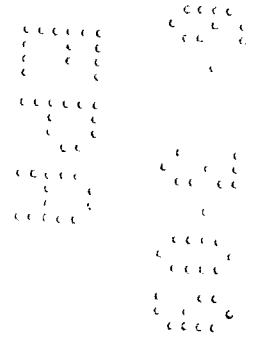
Notification of Storage and Disposal Statement (PR Notice 2007-4) for DiPel 2X, EPA Reg. No. 73049-8 (continuation from the previous page)

I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if the amended label is not consistent with the requirements of 40 CFR §§152.46, 56.10, 156.140, 156.144, 156.146, and 156.156, this product may be in violation of FIFRA and may be subject to enforcement action and penalties under section 12 and 14 of FIFRA.



Doina Bujor
Regulatory manager

June 2, 2009



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4 of 23



June 2, 2009

Sheryl Reilly
 Biopesticides & Pollution Prevention Division
 Document Processing Desk (NOTIF)
 Office of Pesticide Programs (7504P)
 U.S. Environmental Protection Agency
 Room S-4900, One Potomac Yard
 2777 South Crystal Drive
 Arlington, VA 22202-4501
 703-308-8269

RE: DiPel 2X (EPA Reg. No. 73049-8) Notification

Dear Ms. Reilly:

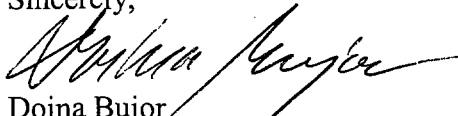
Valent BioSciences Corporation is submitting a notification for DiPel 2X (EPA Reg. No. 73049-8) in accordance with PR Notice 2007-4 and PR. The changes made to the label are to the Storage and Disposal statement and include the container disposal language for non-refillable container.

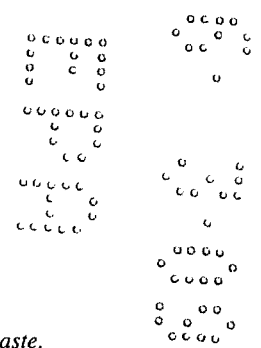
Present submission consists of:

- Application for Registration (EPA form 8570-1)
- One copy of the red-lined label
- One copy of the clean label.

Please contact me if you have any questions at 847-968-4724 or by e-mail at doina.bujor@valent.com.

Sincerely,


 Doina Bujor
 Regulatory Manager



DIPEL 2X
BIOLOGICAL INSECTICIDE
WETTABLE POWDER

List No. 5209

NOTIFICATION

Date Reviewed: 8-6-09

Reviewed By: D. Hudson



For Organic Production

Active Ingredient:

Bacillus thuringiensis subsp. *kurstaki* strain ABTS-351, fermentation solids, spores, and insecticidal toxins.....58.2%

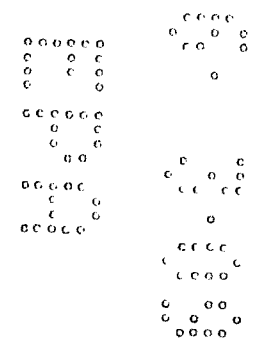
Other Ingredients:.....41.8%

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



Valent BioSciences Corporation
870 Technology Way, Suite 100
Libertyville, IL 60048

EPA Registrations 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 1-800-892-0099 for emergency medical treatment and/or transport emergency information. For all other information, call 1-800-6-Valent.	

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

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

Personal Protective Equipment

Applicators and other handlers must wear:

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

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.

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.

<p>User Safety Recommendations</p> <p>Users should:</p> <ul style="list-style-type: none"> • Wash hands before eating, drinking, chewing gum, using tobacco products or using the toilet. • Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. • Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.
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ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to 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 ¼ mile of any habitats of endangered species or threatened 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 agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry intervals. The requirements in this 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.

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

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

Container Disposal:

(Rigid, small containers) Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. Clean container promptly after emptying. Triple rinse as follows: Empty remaining contents into application equipment or a mix tank. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after flow begins to drip. Repeat this procedure two more times.

(Non-rigid container) Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available or dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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 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 raise gallonage 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 and harvested crops should be added for hard-to-wet crops such as cole crops, or to improve weather-fastness of the spray deposits.

DiPel 2X is a non-restricted use pesticide and does not require a restricted use permit for purchase and use.

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 amount of water needed per acre will depend on crop size, weather, spray equipment, and local experience. Unless otherwise indicated, use at least 2 gallons of water per acre by air; except in the Western U.S., where 5 to 10 gallons is the usual minimum. Add water to the spray or mixing tank at the level that provides maximum agitation. With the agitator running, slowly sprinkle in the DiPel 2X. Continue agitation. Then add other spray materials (if any). Add the balance of the water and agitate until mixed. Maintain the suspension 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 Rate is</u>	<u>Use This Amount Per Gallon</u>
1/4 lb./acre or 100 gals.	1/2 tsp.
1/2 lb./acre or 100 gals.	1 tsp.
1 lb./acre or 100 gals.	2 tsps.
2 lb./acre or 100 gals.	4 tsps.

CHEMIGATION USE DIRECTIONS

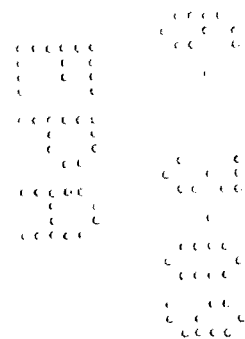
Chemigation directions apply only to the state of Florida and to the following crop categories: Flowers, bedding plants, ornamentals, greenhouse/shade house and outdoor nursery crops. Refer to these label sections under **General Instruction** for application rate information when chemigation is used.

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 systems. 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 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 insure adequate mixing. Any questions on calibration should be directed to your State Extension Service Specialists, to equipment manufacturers or 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.



GENERAL PRECAUTIONS FOR APPLICATIONS THROUGH SPRINKLER IRRIGATION SYSTEMS

Maintain continuous agitation in the mix tank during mixing and application to insure 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.

CHEMIGATION USE DIRECTIONS (continued)

Do not apply when wind speed favors drift, when system connections or fittings leak, when nozzles do not provide uniform distribution or when lines containing the product must be dismantled and drained.

GENERAL INSTRUCTIONS

APPLICATION RATES

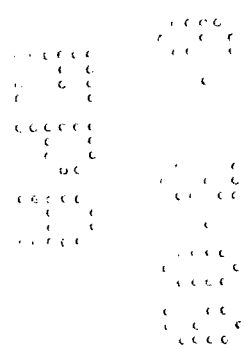
Crop Group (Typical Crops)	PESTS	POUNDS/ACRE
Root and Tuber such as Carrots, Potatoes, Beets and Sugarbeets	Loopers	1/2 - 1
	Omnivorous Leafroller	1/2 - 1
Bulb such as Onions (green and bulb) and Garlic	Hornworms	1/2 - 1
	Imported Cabbageworm	1/2 - 1
Leafy and Cole Crops such as Lettuce (head and leaf), Kale, Celery, Spinach, Broccoli, Cabbage, Mustard Greens, Brussels Sprouts, Cauliflower, Collards, Chinese Cabbage, Endive, Kohlrabi and Parsley	Diamondback Moth	1/2 - 1
	Green Cloverworm	1/2 - 1
	Webworm	1/2 - 1
	Saltmarsh Caterpillar	1/2 - 1
	Armyworms*	1/2 - 2
	Cutworms	1/2 - 1
Fruiting Vegetables such as Tomatoes, Peppers and Eggplant	Loopers	1/2 - 1
	Hornworm	1/2 - 1
	Tomato Fruitworm	1/2 - 1
	Variegated Cutworm	1/2 - 1
	Saltmarsh Caterpillar	1/2 - 1
	Armyworms*	1/2 - 2
	Pinworm	1 - 2
Cucurbit Vegetables such as Melons, Cucumbers and Squash	Loopers	1/2 - 1
	Melonworms	1/2 - 1
	Rindworm complex	1/2 - 1
	Armyworms*	1/2 - 2

*DiPel 2X 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.

APPLICATION RATES (continued)

Crop Group (Typical Crops)	Pests	Pounds/Acre
Legume Vegetables such as Beans, Peas, Lentils and Soybeans	Loopers	1/2 - 1
	Soybean Looper	1/2 - 1
	Green Cloverworm	1/2 - 1
	Velvetbean Caterpillar	1/2 - 1
	Armyworms*	1/2 - 2
	Podworms*	1/2 - 1
OTHER CROPS:		
Tobacco	Tobacco Budworm	1/2 - 1
	Hornworms	1/4 - 1/2
	Loopers	1/2 - 1
Safflower	Loopers	1/2 - 1
	Saltmarsh Caterpillar	1/2 - 1
	Armyworms*	1/2 - 2
Sunflowers	Loopers	1/2 - 1
	Head Moth	1/2 - 1
Peanuts	Loopers	1/2 - 1
	Velvetbean Caterpillar	1/2 - 1
	Green Cloverworm	1/2 - 1
	Podworms*	1/2 - 1

*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.



OTHER CROPS (CONTINUED)

Crop	Pest	Pound/Acre
Alfalfa (Hay and Seed)	Loopers	1/2 - 1
Hay and Other Forage Crops	Alfalfa Caterpillar	1/2 - 1
	European Skipper (Essex Skipper)	1/2 - 1
	Armyworms*	1/2 - 2
Cotton	Tobacco Budworm**	1/2 - 2
	Cotton Bollworm**	1/2 - 2
	Loopers	1/2 - 1
	Saltmarsh Caterpillar	1/2 - 1
	Armyworms*	1/2 - 2

** 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.

Crop	Pest	Pound/Acre
Avocado	Amorbia Moth	1/2 - 2
	Omnivorous Leafroller	1/2 - 2
	Omnivorous Looper	1/2 - 2
	Orange Tortrix	1/2 - 2
	Spanworm	1/2 - 2
Malanga	Saltmarsh Caterpillar	1/2 - 1
	Armyworms*	1/2 - 2
Water Cress	Loopers	1/2 - 1
	Armyworms*	1/2 - 2
	Diamondback Moth	1/2 - 1

*DiPel 2X 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.

OTHER CROPS (continued)

Crop	Pest	Pound/Acre
Kiwi Fruit	Omnivorous Leafroller	1/2 - 2
Hops	Loopers	1/2 - 1
	Armyworms*	1/2 - 2
Bananas	Banana Skipper	1/2 - 1
Asparagus	Armyworms*	1/2 - 2
Corn (Sweet and Field) and Sorghum	Armyworms*	1/2 - 2
	Headworms	1/2 - 1
Rape	Looper	1/2 - 1
	Armyworms*	1/2 - 2
	Heliothis	1/2 - 2
Herbs, Spices and Mints such as Basil, Chives, Dill, Leeks and Peppermint	Looper	1/2 - 1
	Saltmarsh Caterpillar	1/2 - 1
	Armyworms*	1/2 - 2

*DiPel 2X 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.

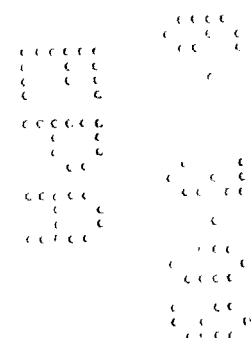
Crop	Pest	Pound/Acre
Pineapple	Gummosos-Batrachedra comosae (Hodges)	1/4 - 1/2
	Thecla-Thecla basilides (Geyr)	
Turf	Sod Webworm	1 - 2

OTHER CROPS (continued)

Crop	Pest	Pound/Acre
Flowers, Bedding Plants and Ornamentals** (Note: Aerial application should be applied in a minimum of 5 gallons per acre)	Loopers	1/4 - 1/2
	Tobacco Budworm	1/4 - 1/2
	Omnivorous Looper	1/4 - 1/2
	Omnivorous Leafroller	1/4 - 1/2
	Diamondback Moth	1/4 - 1/2
	Armyworms*	1/2 - 2
	Ello Moth (Hornworm)	1/4 - 1/2
	Io Moth	1/4 - 1/2
	Oleander Moth	1/4 - 1/2
Azalea Caterpillar	1/4 - 1/2	
Greenhouse/Shadehouse and Outdoor Nursery Crops** such as Leafy, Herbs, Brassica and Fruiting groups	Loopers	1/2 - 1
	Heliothis	1/2 - 2

*DiPel 2X 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.

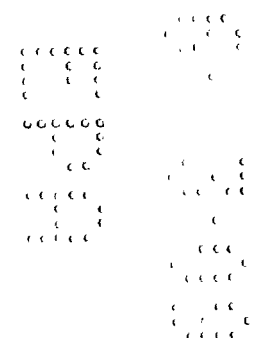
**Chemigation applications only in the state of Florida for flowers, bedding plants, ornamentals, greenhouse/shadehouse and outdoor nursery crops.



DiPel 2X for Small Fruits

Crop	Pest	Pound/Acre
Small Fruit and Berries such as Grapes, Strawberries, Blackberries and Cranberries	Grapeleaf Skeletonizer (ground only)	1/2 - 1
	Grape Leafroller	1/2 - 1
	Achema Sphinx Moth (Hornworm)	1/2 - 1
	Saltmarsh Caterpillar (ground only)	1/2 - 1
	Omnivorous Leafroller (ground only)	1/2 - 1
	Loopers	1/2 - 1
	Orange Tortrix	1/2 - 1
	Oblique Banded Leafroller	1/2 - 1
	Armyworms*	1/2 - 2
	Tobacco Budworm	1/2 - 2
Small Grains	Grape Berry Moth	1/2 - 1
	Loopers	1/2 - 1
	Armyworms*	1/2 - 2

*DiPel 2X 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.



DiPel 2X for Small Fruits (continued)

DiPel 2X for Tree Fruits, Nuts, Citrus and Tropical Fruit

Crop	Pest	Pound/Acre
Stone Fruit such as Cherries, Plum, Peach, Prune and Nectarine	Redhumped Caterpillar	1/2 - 2
	Tent Caterpillars	1/2 - 2
Pome Fruit such as Apples and Pears	Omnivorous Leafroller	1/2 - 2
	Fall Webworm	1/2 - 2
Tree Nuts such as Almonds, Pecan, Walnut and Filbert	Walnut Caterpillar	1/2 - 2
	Cankerworms	1/2 - 2
Pomegranates	Gypsy Moth	1/2 - 2
	Variegated Leafroller	1/2 - 2
	Redbanded Leafroller	1/2 - 2
	Tufted Apple Budworm	1/2 - 2
	Fruittree Leafroller	1/2 - 2
	Filbert Leafroller	1/2 - 2
	Obliquebanded Leafroller	1/2 - 2
	Codling Moth	1/2 - 2
	Cutworms	1/2 - 2
	Citrus	Fruittree Leafroller
Orangedog		1/4 - 1
Citrus Cutworm*		1/2 - 2

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

Crop	Pest	Pound/Acre
Tropical Fruits	Hornworm	1/2 - 2
	Leafrollers	1/2 - 2
	Omnivorous Looper	1/2 - 2
	Loopers	1/2 - 2

APPLICATION RATE (continued)

DiPel 2X for Trees and Forests

Crop	Pest	Lbs/100 Gallons* (Ground Equipment)	Lbs/Acre (Aerial** Application)
Forest, Shade, Sugar Maple Trees and Ornementals	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	

*Rate for hydraulic sprayer. For mist blowers, mix the applicable amounts (lbs.) 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 which deliver droplet size of LESS THAN 150 microns should be used.

DiPel 2X FOR STORED AGRICULTURAL COMMODITIES

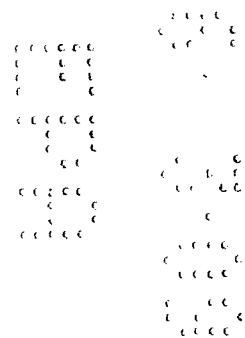
GRAINS, SOYBEANS, SUNFLOWER SEED, CROP SEED, CONDIMENTAL SEEDS, SPICES, HERBS, BIRDSEED¹ AND POPCORN¹

Pest	Rate
Indian Meal Moth	3/8 lb./100 Bu (undiluted and diluted)*
Almond Moth	

*As a surface treatment, apply 1/2 lb. DiPel 2X in 5-10 gal. of water per 500 sq. ft. of grain surface area, mix into top 4 inches.**

¹For all States except California

For the control and prevention of these pests, apply DiPel 2X in a constantly agitated water suspension to the top four inch surface layer of grain in the bin. Use a sprinkler can or sprayer to apply the dosage into the grain stream as the last (top) four inch layer is augered into the bin. Mix 1/20 lb. DiPel 2X per gallon of water. Apply 0.6 pint of this mixture per bushel as grain is augered into storage. Or, sprinkle the dosage into the surface of the grain in the bin and mix thoroughly with a scoop or rake to the depth of four inches. More thorough coverage may be achieved by dividing the recommended dosage into three applications and mixing the grain between applications.



APPLICATION RATES (Continued)

DiPel 2X FOR STORED AGRICULTURAL COMMODITIES (Continued)

GRAINS, SOYBEANS, SUNFLOWER SEED, CROP SEED, CONDIMENTAL SEEDS, SPICES, HERBS, BIRDSEED¹ AND POPCORN¹. (Continued)

For the protection of bagged grain including popcorn, apply the dosage to the entire grain mass and mix thoroughly prior to bagging.

Treatments can be applied to stored grain at any time, but for best results, make application immediately after harvest before moth activity occurs. In areas where late fall harvested grain is not subject to infestation because of low temperatures, application can be delayed until late winter or early spring before moth activity begins. Control for a full storage season should normally be expected; however, repeat application if infestation recurs.

This treatment controls the moth larvae. If an infestation is present when the grain is treated, moth emergence may continue for several days. If immediate control of severe infestations is desired, grain should be fumigated prior to application of this treatment. DiPel 2X **will not control weevils or other beetles.**

Grain treated with DiPel 2X can be used at any time after treatment for any use.

**For commodities coarser than shelled corn, increase depth of treatment according to the habit of the pest.

PEANUTS

Pest	Rate
Indian Meal Moth, Almond Moth	1/4 lb./ton*

*Apply this rate to the top four to eight feet of nuts when filling the warehouse:

To prevent and control these pests, spray an even coating of DiPel 2X on the farmer stock peanuts while filling the warehouse. To make the spray solution, mix 3-3/4 lbs.

APPLICATION RATES (Continued)

DiPel 2X FOR STORED AGRICULTURAL COMMODITIES (Continued)

GRAINS, SOYBEANS, SUNFLOWER SEED, CROP SEED, CONDIMENTAL SEEDS, SPICES, HERBS, BIRDSEED¹ AND POPCORN¹. (Continued)

DiPel 2X per 5 gallons of water. Apply to 15 tons of commodity. Do not pre-mix more spray solution than will be used within 12 hours. Keep the spray suspension agitated during application, and use pressures and nozzles sufficient to handle this suspension.

Before filling the warehouse, clean thoroughly, then spray interior of the facility with a DiPel 2X suspension at the rate of 1/2 lb. DiPel 2X per 100 gallons water. Spray enough suspension to wet all cracks and crevices.

For bagged peanuts, treat the whole mass of commodity at the rate indicated above.

FLUE-CURED TOBACCO

Pest	Rate
Tobacco Moth	0.2 oz./100 lbs*

*Apply 0.2 ounce (approximately 2 1/2 teaspoonsful) of DiPel 2X in one quart of water per 100 pounds of tobacco as a fine mist spray. Avoid oversetting. Tobacco should have just enough moisture to be handled without shattering at the time of application.

Tobacco to be Stored up to Twelve Months.

Spray loose leaves as the tobacco is being bundled from the curing barn. For tobacco on sticks, treat both sides of leaves.

Stored Tobacco.

For tobacco which is to be carried over, rebundle or restack sticks, fluff up tobacco and spray loose leaves.

For tobacco that has been stored over three weeks, apply at first signs of infestation promptly open bundles, spray loose leaves, then bundle.

Treatment of Storage Barns.

If tobacco has been treated, or is going to be treated, treatment of the floors and walls may be made to aid in control. Sweep out the area, especially cracks and corners, and all of the loose tobacco pieces in which the moth might breed. Make a spray mixture containing 1/2 oz. DiPel 2X per 2 1/2 gallons of water. Apply this at a rate of 1/2 gallon per 1000 sq. ft. of surface area. Be sure to spray into cracks and between floorboards.

NOTICE TO USER

Seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning the 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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