

PLEASE NOTE

This image contains more than one label approved for this product on this date.

73049-5

7-2-2002

73049-5 1/3

**DIPEL® FMU
BIOLOGICAL INSECTICIDE**

Active Ingredient:

Bacillus thuringiensis, subsp. *kurstaki*, strain ABTS-351, fermentation solids and solubles.....23.7%

Other Ingredients.....76.3%

Total.....100.0%

Potency: 16,000 International Units of Potency per mg (7.26 Billion International Units per pound)

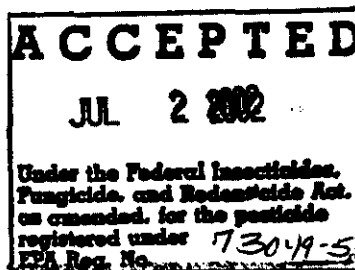
There is no direct relationship between intended activity (potency) and the Percent Active Ingredient by Weight.

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FOR MANUFACTURING USE ONLY

FOR REPACKING OR RELABELING ONLY

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



EPA Reg. No. 73049-5
EPA Est. No. 33762-IA-1

FIRST AID	
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.
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.

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.

Personal Protective Equipment

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- 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.

User Safety Recommendations

Users should:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

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.

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.

STORAGE AND DISPOSAL

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

Storage: Reclose container of unused DiPel. Store in 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: Do not reuse empty container. Completely empty container into application equipment. Then dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

NEXT

LABEL

73049-5

7-2-2002

1/11

**DIPEL® (WORM KILLER)
BIOLOGICAL INSECTICIDE
WETTABLE POWDER**

Active Ingredient:

<i>Bacillus thuringiensis</i> , subsp. <i>kurstaki</i> , strain ABTS-351, fermentation solids and solubles.....	23.7%
Other Ingredients.....	76.3%
Total.....	100.0%

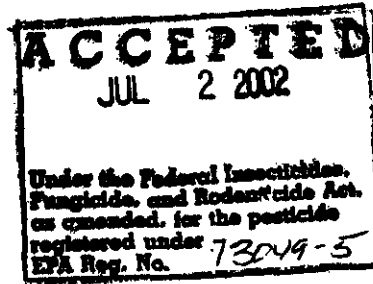
Potency: 16,000 International Units of Potency per mg (7.26 Billion International Units per pound)

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HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION**

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- 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.

User Safety Recommendations

Users should:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

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.

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.

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.

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 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.

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STORAGE AND DISPOSAL

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DAYS TO HARVEST

There are no restrictions on applying DiPel up to the time of harvest.

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

For Smaller Spray Volumes:

If Rate is	Use This Amount Per Gallon
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.

APPLICATION DIRECTIONS

Do not apply this product through any type of irrigation system.

DiPel 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 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 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, 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.

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

DiPel 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 by air; except in the far west, 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. 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 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.

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APPLICATION RATE

Crop	Pest	Pounds/ Acre
Cole Crops and Vegetables including Leafy, Root, Stalk, and Seed and Pod Types (Peas, Beans, Lentils, etc., dry or succulent), Potatoes, Cucurbits	Loopers	1/2 to 1
	Hornworms	1/4 to 1/2
	Imported Cabbageworm	1/4 to 1/2
	Diamondback Moth	1/3 to 2/3
	Green Cloverworm	1/4 to 1/2
	Webworm	1/2 to 1
	Armyworms*	1 to 2

*DiPel may be used to suppress small armyworms (1st and 2nd instar) when populations are light and full coverage ground sprays are applied.

Tomato, Peppers, Eggplant	Loopers	1/2 to 1
	Hornworms	1/4 to 1/2
	Tomato Fruitworm*	1
	Variegated Cutworm	1
	Saltmarsh Caterpillar	1/2 to 1
	Armyworms**	1 to 2

*Apply weekly in a preventative program.

**DiPel may be used to suppress small worms (1st and 2nd instar) when populations are light and full coverage ground sprays are applied.

Cucurbits: Melons, Squash, Cucumbers, etc.	Rindworm Complex*	1/2 to 1
	Melonworms	1 to 2

*Apply weekly in a preventive program.

Tobacco	Tobacco Budworm	1/2 to 1
	Hornworms	1/4 to 1/2
	Loopers	1/2 to 1

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Crop	Pest	Pounds/ Acre
Safflower, Sugar beets, Mints	Loopers	1/2 to 1
	Saltmarsh Caterpillars	1/2 to 1
Soybeans, Sunflowers, Peanuts	Loopers	1/2 to 1
	Green Cloverworm	1/4 to 1/2
	Velvetbean Caterpillar	1/2 to 2/3
	Podworm*	1/2 to 1
*DiPel suppresses podworms under pest management conditions.		
Alfalfa, Hay and Small Grains	Loopers	1/2 to 1
	Alfalfa Caterpillar	1/8 to 1/4
	European Skipper	1/4 to 1/2
	(Essex Skipper)	
Cotton	Tobacco Budworm*	1/4 to 1
	Cotton Bollworm*	1/4 to 1
	Loopers**	1/2 to 1

*Use to suppress light to moderate populations of newly hatched worms in pest management conditions. Use under close scouting when beneficial insects are active or building. Repeat treatments at 4 to 5 day intervals as long as necessary and results are acceptable.

Once beneficial insects are no longer a factor, DiPel (at 1/4 to 3/4 lb./acre) may be tank mixed with methomyl (Lannate® or Nudrin®) at .225 to .675 lbs. AI per acre to control light to moderate infestations of early instar larvae. Observe any rate, frequency, or boll load label restrictions for methomyl in your area. Methomyl will likely cause reddening of cotton foliage. Discontinue this tank mix if reddening becomes excessive.

Before using any tank mix, read the product labels from all environmental and usage cautions.

**Full plant coverage needed.

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Crop	Pest	Lbs./100 Gals.
Turf	Sod Webworm	2 to 4
Flowers and Ornamentals (ground only)	Loopers	1/2 to 1
	Tobacco Budworm	1/2 to 1
	Omnivorous Looper	1/2 to 1
	Omnivorous Leafroller	1/2 to 1
	Diamondback Moth	1/3 to 2/3
	Armyworms*	1 to 2
	Ello Moth (Hornworm)	1/4 to 1/2
	Io Moth	1/2 to 1
	Oleander Moth	1/2 to 1

*DiPel may be used to suppress small armyworms (1st and 2nd instar) when populations are light and full coverage ground sprays are applied.

DiPel for Fruits, Nuts, Trees, Ornamentals			
Crop	Pest		Pounds/Acre
Grapes, Small Fruits, Cane and Bush Berries	Grapeleaf Skeletonizer (ground only)		2/3 to 1
	Grape Leafroller		1/2 to 3/4
	Achema Sphinx Moth (Hornworm)		1/3 to 3/4
	Saltmarsh Caterpillar (ground only)		1
	Omnivorous Leafroller (ground only)		1/2 to 1
	Loopers		1/2 to 1
		Pounds/100 Gallons* (Ground Equipment)	Pounds/Acre (Aerial** Application)
Stone Fruits, Nut Trees, Pomegranates	Redhumped Caterpillar	1/4 to 1/2	1/3 to 1
	Tent Caterpillars	1/4 to 1/2	1/2 to 1
	Omnivorous Leafroller	1/2 to 1	--
	Fall Webworm	1/4 to 1/2	1/2
	Walnut Caterpillar	1/2 to 1	1/2 to 1
	Cankerworms	1/4 to 1/2	1/2 to 1
Pome Fruits ¹	Cankerworms	1/4 to 1/2	1/2 to 1
	Gypsy Moth	1/2 to 1	1
	Variiegated Leafroller	1/2 to 1	--
	Redbanded Leafroller	1/2 to 1	--
	Tufted Apple Budmoth	1/2 to 1	--
	Tent Caterpillars	1/4 to 1/2	1/2 to 1

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*Rate for hydraulic sprayer. For mist blowers, mix the applicable amount (lbs.) in 10 gallons of water.

¹Use 400-450 gallons/acre to suppress listed pests in pest management program.

DiPel for Fruits, Nuts, Trees, Ornamentals, continued			
Crop	Pest	Pounds/100 Gallons* (Ground equipment)	Pounds/Acre
Citrus ²	Fruittree Leafroller	1/2 to 1	--
	Orangedog	1/4 to 1/2	--
Tropical Fruits ³	Hornworm	1/2 to 1	--
	Leafroller	1/2 to 1	--
	Omnivorous Looper	1/2 to 1	--
	Loopers	1/2 to 1	--
Forest, Shade, Sugar Maple Trees and Ornamentals	Gypsy Moth	1/2 to 1	1
	Bagworm	1/2 to 1	1/2 to 1
	Redhumped Caterpillar	1/4 to 1/2	1/4 to 1
	Spring & Fall Cankerworm	1/4 to 1/2	1/4 to 1/2
	Fall Webworm	1/2	1/2
	Elm Spanworm	1/2 to 1	1/2 to 1
	Tent Caterpillars	1/4 to 1/2	1/2
	California Oakworm	1/4 to 1/2	1/4 to 1/2
	Pine Butterfly	1	1
	Spruce Budworms ⁴	1	1
	Saddle Prominent Caterpillar	1/2 to 1	--
	Douglas Fir Tussock Moth	1	1
	Western Tussock Moth	1/2 to 1	--
	Fruittree Leafroller	1/2 to 1	--
	Blackheaded Budworm	1	--
	Mimosa Webworm	1/2 to 1	--
Jack Pine Budworm	1/2 to 1	3/4 to 1	
Saddleback Caterpillar	1/2 to 1	--	

**For aerial application, use in one to ten gallons of water depending on type and density of trees. For best results, spray systems which deliver droplet size of 200 microns should be used.

²Use 100 to 400 gallons/acre.

³Use at least 200 gallons/acre.

⁴Use against populations below 35 larvae per 18-inch branch tip. Use a minimum of 1/2 gallon/acre by air.

DIPEL FOR STORED AGRICULTURAL COMMODITIES

For the Control of Tobacco Moth on Flue-Cured Tobacco

Apply 0.4 ounce (approximately 5 teaspoonfuls) of DiPel in one quart of water per 100 pounds of tobacco as a fine mist spray. Avoid overwetting. Tobacco should have just enough moisture to be handled without shattering at the time of application.

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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 restock 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 oz. DiPel 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.

STORED GRAINS, SOYBEANS, SUNFLOWER SEED, PEANUTS, CROP SEED, POPCORN¹ AND BIRDSEED¹.

Pest	Rate
Indian Meal Moth, Almond Moth	3/4 lb./100 Bu (undiluted and diluted)*

*As a surface treatment, apply 1 lb. DiPel in 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 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 1/10 lb. DiPel per gallon of water. Apply 0.6 pint of this mixture per bushel as grain is augered into storage. Or, sprinkle the dosage onto 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.

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

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Treatments can be applied to the 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 will not control weevils or other beetles.**

DiPel is exempt from tolerance restrictions and the treated grain can be used at any time after treatment for any use.

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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