

275-18

5-14-1979

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01-2962/R4-300-4-79 Rev

**WETTABLE POWDER
BIOLOGICAL INSECTICIDE**

Active ingredient:

Bacillus thuringiensis, Berliner, 16,000 International Units of Potency per mg. (7.26 billion International Units per pound).

**KEEP OUT OF REACH OF
CHILDREN
CAUTION**

E.P.A. Registration No. 275-18
E.P.A. Est. No. 33762-1A-1

BEEES

Honey bees foraging treated areas are not harmed by Dipel use.

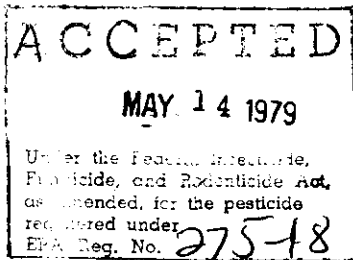
DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

STORAGE AND DISPOSAL

STORAGE: Reclose containers of unused Dipel. Store in a dry place.

DISPOSAL: Do not reuse container. Perforate or crush and discard empty container according to local trash disposal regulations.



Bacillus thuringiensis is exempt from the requirement of a tolerance on all raw agricultural commodities when applied to growing crops or after harvest in accordance with good agricultural practices.

For Smaller Spray Volumes: 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.

DIRECTIONS FOR USE

DIPEL (Bacillus thuringiensis) Wettable Powder may be used in conventional aerial or ground spray equipment with suitable quantities of water to provide thorough coverage. Fill the spray tank half full of water. Slowly sprinkle the required amount of Dipel into the tank while agitating. Then, agitate thoroughly while bringing the total volume of water to the required level. A suitable spreader-sticker may be combined with Dipel.

Apply Dipel when pests are first noticed and repeat at intervals sufficient to maintain control. Thorough coverage on both sides of leaves is essential since the insect must ingest Dipel. After ingestion, the larvae stop feeding and death follows within several days.

Do not allow the spray mixture to stand in the tank for more than 12 hours.

SPRAY TO HARVEST

Dipel may be applied up to the time of harvest.

APPLICATION RATE

Thorough coverage is essential for good control.

Crop	Pest	Pounds/Acre
Broccoli, Cabbage, Cauliflower, Collards, Kale, Lettuce, Mustard and Turnip Greens, Spinach	Cabbage Looper	1/2 to 1 lb.
	Imported Cabbageworm	1/4 to 1/2 lb.
	Diamondback Moth	1/4 to 1/2 lb.
Beans, Brussel Sprouts (Ground only), Cucumbers, Melons, Potatoes	Cabbage Looper	1/2 to 1 lb.
Celery	Celery Looper and Cabbage Looper	1/2 to 1 lb.
Watermelons (Florida)	Rindworm Complex (Cabbage Looper, Tobacco Budworm, Granulate Cutworm, Beet Armyworm)	1/2 to 1 lb.

Apply Dipel on a weekly schedule as a preventative program.

Tobacco	Budworm	1/2 to 1 lb.
	Cabbage Looper	1/2 to 1 lb.
	Hornworm	1/4 to 1/2 lb.

Dipel may be tank mixed with MH-30* at recommended rates on flue-cured tobacco. Do not add other types of sucker control materials. Follow the application directions on the maleic hydrazide label and all label precautions for both products.

Tomatoes	Cabbage Looper	1/2 to 1 lb.
	Tomato Hornworm	1/4 to 1/2 lb.
	Tomato Fruitworm	1 lb.

*Apply on Regular Spray Program every 5-7 days.

Grapes (Ground only)	Grape Leaf Folder	1/2 to 3/4 lb.
Grapes (Calif. Ground only)	Omnivorous Leafroller	1/2 to 1 lb.

For best control of Omnivorous Leafroller, apply Dipel starting with the first brood to prevent build-up of highly damaging population levels later in season. For use against subsequent broods, apply Dipel WP with air-blast sprayers for maximum penetration of spray into the vines.

Alfalfa (Calif., Ariz., N. Mex., Tx.)	Alfalfa Caterpillar	1/8 to 1/4 lb.
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Peas (Northwestern U.S.)	Alfalfa Looper	1/2 to 1 per 5 gals. by air
Chrysanthemums	Cabbage Looper	1/2 to 1 lb./acre or 100 gallons
Soybeans	Green Cloverworm	
	Velvetbean Caterpillar	1/4 to 1/2
	Soybean Looper	
	Cabbage Looper	1/2 to 1

*For ground equipment, 8 to 20 gallons of final spray per acre are recommended. For aerial application 2 to 5 gallons of final spray per acre should be used. The use of a suitable spreader-sticker is recommended particularly in aerial sprays to aid in coverage.

Cotton	Tobacco Budworm	1/2 to 1 lb.
	Cotton Bollworm	

*Dipel may be used to suppress very small worms (1st and 2nd instar larvae) under a pest management program that includes case scouting. Apply just as eggs begin to hatch and reapply every 3-5 days as long as eggs and/or small larvae are present or until larvae have been reduced by an acceptable amount. If heavy worm populations occur, it may be necessary to apply an insecticide with rapid knockdown and good larvicidal activity as a replacement.

Thorough coverage of the plant terminals is essential for adequate suppression. Apply as a 5-15 gallons/acre total volume spray with ground equipment and 2-5 gallons/acre total volume spray with aerial equipment.

COTTON TANK MIXES

Before mixing and applying a tank mix of DIPEL, READ the container labels for both products for environmental and usage cautions.

Mix DIPEL into water before adding the other tank mix ingredient.

Insecticide	Pest	Pounds/Acre
DIPEL plus chlordimeform (Fundax® or Saecron®)	Tobacco Budworm	1/2 to 1 lb.
	Cotton Bollworm	1/2 to 1 lb. A.I.

The lower rate of DIPEL WP (1/4 lb./acre) is recommended for light to moderate infestation levels in early season. Increase to the higher rates and use shorter spray intervals under heavier pressures. If an extremely heavy worm population occurs due to an interruption of spray schedule or to high egg deposition, it may be necessary to apply an insecticide with rapid knockdown and good larvicidal activity as a temporary replacement for DIPEL/chlordimeform. Once populations are reduced to light to moderate levels, DIPEL/chlordimeform sprays may be resumed.

Apply DIPEL/chlordimeform in 5 to 10 gallons of spray mix per acre with ground equipment and in 2 to 5 gallons for aerial application. Begin treatments when bollworm eggs first appear and maintain a 3 to 5 day spray schedule to achieve timely applications against repeated infestations.

PRECAUTIONS

Reapply DIPEL plus chlordimeform as soon as possible if rainfall occurs within 12 hours after application.

The mixture of DIPEL with chlordimeform for inhibiting the growth of epiphytous larvae on plants is covered by Abbott U.S. Patent 3,937,813.

DIPEL plus methomyl (Lannate® or Nudrin®)	Tobacco Budworm	1/2 to 1 lb.
	Cotton Bollworm	.225 lb. A.I.

To control light to moderate populations of 1st and 2nd instar budworm/bollworm infestations, maintain close scouting of fields. Spray when eggs begin to hatch and continue on a 3 to 5 day schedule as long as control is being achieved. Use the lower rate of DIPEL in the mix for lighter pressures and increase as necessary to maintain control. If heavy worm populations occur, it may be necessary to apply a heavy rate of an insecticide with rapid knockdown effect.

as a temporary replacement for the low rates indicated for this DIPEL/methomyl tank mix.

Observe any rate, frequency, or boll load methomyl label restrictions for your area. Methomyl will likely cause reddening of cotton foliage. Discontinue use of the tank mix if reddening becomes excessive.

For aerial application, use a minimum of 3 gallons final spray per acre. By ground, use a minimum of 5 gallons.

Crop	Pest	Pounds/Acre
Rangeland	Rangeland Caterpillar	1/4 lb.

Use a minimum of 0.5 gallons of total spray mixture by air. Do not apply if rain is threatening. Repeat if deposits are washed off within 24 hours of application or checks show that control was not achieved. Addition of a spreader-sticker such as Biofilm[®], Chevron[®] Spreader-Sticker or Triton[®] B-1956 will aid in adherence of the spray deposits.

Crop	Pest	Pounds/Acre
Pasture, hay, small grains and forage crops	European Skipper (Essex Skipper)	1/4 to 1/2 lb.

Apply in 20 gallons water/acre with ground equipment or 2-5 gallons/acre with aerial equipment. By air, use the higher rate of DIPEL. The use of a spreader-sticker may be an aid.

DIPEL for Greenhouse Crops

Crop	Pest	Pounds 100 Gallons Spray
Cabbage, Cucumbers, Lettuce, Tomatoes	Cabbage Looper	1/2 to 1 lb.
Chrysanthemums	Cabbage Looper	1/2 to 1 lb.

DIPEL For Nut Trees

Crop	Pest	Pounds 100 Gallons* (ground equipment)
Pecans	Fall Webworm	1/2 lb.
Walnuts	Red Humped Caterpillar	1/4 to 1/2 lb.
Almonds	Tent Caterpillar	1/2 lb.

*Spray when egg hatch is essentially complete and larvae are small. Repeat applications if necessary. Use sufficient spray volume to wet the foliage. For mist blowers or concentrate systems, use the listed rate of DiPel per acre in sufficient water to insure good coverage.

DIPEL for Forest, Ornamental and Shade Trees

Pest	Pounds 100 Gallons* (Ground Equipment)	Pounds Acre** (Aerial Application)
Gypsy Moth (Northeastern U.S.)	1/2 to 1 lb.	1 lb.
Bagworm	1/2 to 1 lb.	1/2 to 1 lb.
Red-Humped Caterpillar (California only)	1/4 to 1/2 lb.	1/4 to 1 lb.
Spring & Fall Cankerworm	1/4 to 1/2 lb.	1/2 lb.
Fall Webworm	1/2 lb.	—
Egg Spanworm	1 lb.	—
Tent Caterpillar	1/4 to 1/2 lb.	1/2 lb.
California Oak Moth	1/2 to 1 lb.	—
Pine Butterfly	1 lb.	1 lb.
Spotted Budworm (North-east)	1 lb.	1 lb.?
Saddle Prominent Caterpillar	1/2 lb.	—
Douglas' Fir Tussock Moth ³	1 lb.	1 lb.
Western Tussock Moth	1/2 to 1 lb.	—
Fruit Tree Leafroller	1/4 to 1 lb.	—
Blackheaded Budworm	1 lb.	—

*Rate for hydraulic sprayer. For mist-blowers mix the applicable amount (lbs.) per 100 gallons of water.

**For aerial application apply the applicable amount (lbs.) per acre in one (1) to five (5) gallons of water depending on type and density of trees. Spray when egg hatch is essentially complete and larvae are between the 1st and 3rd instars. Leaf expansion at this time should be 25-50 per-

cent. Repeat application in approximately 10-14 days if significant reinfestation or extended egg-hatch occurs. For best results, spray systems which deliver droplet sizes of 100-200 microns should be used.

¹For a reduction in defoliation against populations below 35 larvae per 18-inch branch tip.

²Minimum of 4 gal./acre.

³For maximum efficiency, the addition of a suitable anti-evaporant, such as DiB, molasses, or sorbitol is recommended, as well as a spreader-sticker, such as Triton[®] B-1956, Biofilm[®] or Chevron[®] Spray-Sticker. Spray when egg hatch is essentially complete and larvae are in earliest stages of development and actively feeding on exposed foliage surface. Applications should generally be timed to coincide with peak larval emergence and foliage expansion to assure adequate spray deposition. For best results, spray systems which emit a mean droplet size of 200 microns should be used.

DIPEL for Stored Agricultural Commodities.

FOR THE CONTROL OF TOBACCO MOTH ON FLUE-CURED TOBACCO

Apply 0.4 ounce (approximately 5 teaspoonsful) of DIPEL WP 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.

Tobacco to be stored One 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 Bares.

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 WP 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

Pest	Rate
Indian Meal Moth	3/4 lb./100 bu*
Almond Moth	—

*As a surface treatment, apply 1 lb. DIPEL WP in 10 gal water per 500 sq. ft. of grain surface area; mix into top 4 inches.

For the control and prevention of these pests apply DIPEL WP 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 of grain is augered into the bin. Mix 1/10 lb. DIPEL WP 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, apply the dosage to the entire grain mass and mix thoroughly prior to bagging.

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.

MH-30, Fundal, Galecron, Lanrate, Nudrin, Triton B, Biofilm and Chevron Spray-Sticker are trademarks of companies other than Abbott Laboratories.



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