

BEST AVAILABLE COPY

Final Printed Labeling
December 3, 1984

dipel[®]
2X

01 3054/83-00-0004

WETTABLE POWDER
BIOLOGICAL INSECTICIDE

Active ingredient:
Bacillus thuringiensis, var. *kurstaki*,
32,000 International Units of Potency per mg.
(14.52 Billion International Units
per pound) 64%
Inert ingredients 36.6%

KEEP OUT OF REACH
OF CHILDREN

CAUTION

E.P.A. Registration No. 275-37
E.P.A. Est. No. 33782-1A-1

STORAGE AND DISPOSAL
See container label.

BENEFICIAL INSECTS

Honeybees foraging treated areas are not
harmed by DIPEL 2X use.

DIPEL 2X does not interrupt the activities
of beneficial and predaceous arthropods in pest
management programs.

DIRECTIONS FOR USE

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

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

Stems: DIPEL 2X may be used for any labeled
pest in both field and greenhouse uses.

DEC 27 1984

Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under
EPA Reg. No. 275-37

For Sprayer Spray Volume:

Rate in	Use This Amount Per Gallon
1/2 lb./acre or 100 gal.	1/2 tsp.
1 lb./acre or 100 gal.	1 tsp.
2 lb./acre or 100 gal.	2 tsp.

DIRECTIONS FOR USE

DIPEL 2X is a highly selective insecticide for
use against listed caterpillars (larvae) of lepi-
dopterous insects. Close scouting and early at-
tention to infestations is highly recommended.
Larvae must not deposit of DIPEL 2X to be ef-
fective. 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 pro-
vide a uniform deposit of DIPEL 2X at the
site of larval feeding. For some crops direct-
ed drop nozzles by ground machines are re-
quired.
- Under heavy pest population pressure, use
the higher label rates, shorten the spray in-
terval, 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 ac-
tivity, rainfall after treating, and other fac-
tors. If attempting to control a pest with a
single spray, make the treatment when egg
hatch is essentially complete, but before ex-
tensive 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.

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 experi-
ence. 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 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.

APPLICATION RATE

Crop	Pest	Pounds/Acre
Cole Crops and Vegetables including Leafy, Root, Stalk, and Seed and Pod	Larvae	1/2 to 1/4
Types (Peas, Beans, Lentils, etc. dry or matured Potatoes, Cucurbits	Caterpillars	1/2 to 1/4
	Root-knotting Nematode	1/2 to 1/4
	Greenhouse Flea Beetle	1/2 to 1/4
	Whiteflies	1/2 to 1/4
	Armyworms*	1/2 to 1

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

Tomatoes, Peppers, Lycopers	Larvae	1/2 to 1/4
	Minerworms	1/2 to 1/4
	Tomato Fruitworm*	1/2
	Variegated Caterpillars	1/2
	Soft-bodied	1/2 to 1/4
	Caterpillars	1/2 to 1/4
	Armyworms**	1/2 to 1

*Apply weekly in a preventive program.

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

Cucurbits: Melons, Squash, Cucumbers, etc.	Root-knotting Complex*	1/2 to 1/4
	Whiteflies	1/2 to 1

*Apply weekly in a preventive program.

Tabacco	Tabacco Rootworm	1/2 to 1/4
	Minerworms	1/2 to 1/4
	Larvae	1/2 to 1/4

DIPEL 2X may be tank mixed with water control products at
recommended rates. Follow the application directions on the
water control label. Observe all label precautions for all prod-
ucts used.

Soft-bodied, Sugar beets, Masts	Larvae	1/2 to 1/4
	Scavenger	1/2 to 1/4
	Caterpillar	1/2 to 1/4

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DEC 27 1984

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Crop	Pest	Pounds/Acre
Soybeans, Fieldcorn, Peas	Larvae	1/2 to 1/4
	Greenhouse Flea Beetle	1/2 to 1/4
	Whiteflies	1/2 to 1/4
	Caterpillars	1/2 to 1/4
	Peas*	1/2 to 1/4

*DIPEL 2X suppresses populations of early instars of peas.

Alfalfa, Pasture, Hay, Small Grains and Forage Crops	Larvae	1/2 to 1/4
	Alfalfa Caterpillar	1/2 to 1/4
	European Sprayer (Green Sprayer)	1/2 to 1/4

Roundup	Roundup Caterpillar	1/2 to 1/4
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Use a minimum of 1/2 to 1 gallon water per acre.

Corn	Tabacco Rootworm	1/2 to 1/4
	Corn Rootworm	1/2 to 1/4
	Larvae**	1/2 to 1/4

*Use to suppress light to moderate populations of early instars of peas
in past management systems. Use water alone against
when populations are heavy or building. Repeat treatments
at 4 to 5-day intervals as long as necessary and weather are ac-
ceptable. If 1/2 lb. or more tabacco rootworm eggs, add 1/2 lb. Di-
chlorodimethyl p-toluenesulfonate (Dichloro) per acre to 1/2 lb. DIPEL 2X.
Increase dichlorodimethyl to 1/2 lb. if needed.

These herbivorous insects are no longer a factor. DIPEL 2X (at 1/2 to
1/4 lb./acre) may be tank mixed with malathion (Lannate® or R-
dial®) at 225 to 375 lb. Ail per acre to control light to moderate
populations of early instars of larvae. Observe any rate frequency, or
full label label restrictions for malathion in your area. Malathion
will likely cause reddening of corn foliage. Reevaluate the
risk due to reddening because of weather.

Before using any tank mix, read the product label for all restric-
tions and usage cautions. Dichlorodimethyl is restricted to control
applications and to states where registered.

**Full plant coverage needed.

*The degree of BA with dichlorodimethyl for reducing the growth of
larval populations on plants is limited by Adult U.S. patent
3,337,013.

Yard	Red Whiteflies	1 to 2
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Crop	Pest	lbs./1000 Sds.
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Peas and Broadbeans (ground only)	Larvae	1/2 to 1/4
	Tabacco Rootworm	1/2 to 1/4
	Caterpillars	1/2 to 1/4
	Larvae	1/2 to 1/4
	Root-knotting Nematode	1/2 to 1/4
	Armyworms*	1/2 to 1
	the Nematode	1/2 to 1/4
	to Nematode	1/2 to 1/4
	Strongly Nematode	1/2 to 1/4

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

DIPEL 2X FOR STORED... AGRICULTURAL COMMODITIES

GRAINS, OYSTERS, SUGAR BEETS, CORN,
SEED, COMMERCIAL SEED, SPECIAL MIXES

Pest	Rate
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Indian Meal Moth, 1/2 lb./1000 lbs.
Almond Moth, 1/2 lb./1000 lbs.

*As a preventive treatment, apply 1/2 lb. DIPEL 2X in 10 gal. of water
per 1000 sq. ft. of grain surface once per day for 4 weeks.

For the control and prevention of damage, apply DIPEL 2X in
a constantly agitated water suspension at the top four inch
surface layer of grain in the bin. Use a sprayer or a sprayer
to apply the slurry into the grain stream at the last four inch

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DIPEL 2X for Fruits, Nuts, Trees, Ornamentals

Crop	Pest	Pounds/Acre	
Grapes, Small	Graped Skeletonizer (ground only)	1/2 to 1/2	
Fruits, Cane	Grape Leafhopper	1/2 to 1/2	
and Bush	Achana Spine Mite (Harmless)	1/2 to 1/2	
Berries	Saltmarsh Caterpillar (ground only)	1/2	
	Omnivorous Leafhopper (ground only)	1/2 to 1/2	
	Looper	1/2 to 1/2	
		Pounds/100 Gallons* (Ground)	Pounds/Acre (Aerial)** (Application)
Stone Fruits, Nut Trees, Pomegranates	Redhumped Caterpillar	1/2 to 1/2	1/2 to 1/2
	Test Caterpillars	1/2 to 1/2	1/2 to 1/2
	Omnivorous Leafhopper	1/2 to 1/2	—
	Fall Whitebore	1/2 to 1/2	1/2
	Walnut Caterpillar	1/2 to 1/2	1/2 to 1/2
	Cantharid	1/2 to 1/2	1/2 to 1/2
Pear Fruits ¹	Cantharid	1/2 to 1/2	1/2 to 1/2
	Gypsy Moth	1/2 to 1/2	1/2
	Variegated Leafhopper	1/2 to 1/2	—
	Redhumped Leafhopper	1/2 to 1/2	—
	Tufted Apple Budmoth	1/2 to 1/2	—
	Test Caterpillars	1/2 to 1/2	1/2 to 1/2
Citrus ²	Fruitree Leafhopper	1/2 to 1/2	—
	Crangulid	1/2 to 1/2	—
Tropical Fruits ³	Harmless	1/2 to 1/2	—
	Leafhoppers	1/2 to 1/2	—
	Omnivorous Looper	1/2 to 1/2	—
	Looper	1/2 to 1/2	—
Forest, Shade, Sugar Maple Trees and Ornamentals	Gypsy Moth	1/2 to 1/2	1/2
	Begonia	1/2 to 1/2	1/2 to 1/2
	Redhumped Caterpillar	1/2 to 1/2	1/2 to 1/2
	Spring and Fall Cantharid	1/2 to 1/2	1/2 to 1/2
	Fall Whitebore	1/2	1/2
	Elm Spanworm	1/2 to 1/2	1/2 to 1/2
	Test Caterpillars	1/2 to 1/2	1/2
	California Crabapple	1/2 to 1/2	1/2 to 1/2
	Pine Butterfly	1/2	1/2
	Spiny Budworm ⁴	1/2	1/2
	Saltmarsh Caterpillar	1/2 to 1/2	—
	Daughter For Teneck Mite	1/2	1/2
	Western Teneck Mite	1/2 to 1/2	—
	Fruitree Leafhopper	1/2 to 1/2	—
	Blackheaded Budworm	1/2	—
	Monroe Whitebore	1/2 to 1/2	—
	Jack Pine Budworm	1/2 to 1/2	1/2 to 1/2
	Saltmarsh Caterpillar	1/2 to 1/2	—

*For "bushy" sprays: For most blossoms, use the applicable amount (lb) in 10 gallons of water.

**For a 1000-1000 spray: Use 1 to 2 gallons of water depending on type and density of trees. For best results, spray systems which deliver droplets size of 200 microns should be used.

*Use 400-600 gallons/acre to suppress listed pests in pest management programs.

*Use 100 to 400 gallons/acre.

*Use at least 200 gallons/acre.

*Use against populations below 35 larvae per 10 inch branch tip. Use a minimum of 1/2 gallon/acre by air.

Apply to the top of the tree 1/20 lb. DIPEL 2X per gallon of water. Apply 1/2 lb. of the mixture per bush as grain is stored into storage. If possible, 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 making the grain between applications.

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

Treatments can be applied to the stored grain at any time, but, for best results, make applications 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 larvae infestation is desired, grain should be fumigated prior to application of the treatment. DIPEL 2X will not control weevils or other beetles.

DIPEL 2X is exempt from tolerance restrictions and the treat of grain can be used at any time after treatment for any use.

**For commodities covered than specified, use increase depth of treatment according to the habit of the pest.

PEANUTS

Pest	Rate
Indian Meal Moth	1/2 lb./ton*
Almond Moth	1/2 lb./ton*

*Apply this rate to the top layer to eight feet of nuts when filling the warehouse.

To prevent and control these pests, spray an even coating of DIPEL 2X on the former stock peanuts while filling the warehouse. To make the spray solution, mix 3% lb. DIPEL 2X per 5 gallons of water. Apply to 15 tons of commodity. Do not use more spray solution than will be used within 12 hours. Keep the spray suspension agitated during application, and use pressure 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	1/2 lb. or 100 lbs.*

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

Tobacco to be stored up to Tenure Months.

Spray later leaves as the tobacco is being banded 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 banded, spray loose leaves, then bundle.

Treatment of Storage Barns.

If tobacco has been treated, or is going to be treated, treat most of the floors and walls may be made to and 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 lb. 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 accurate packing directions.

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Chemical and Agricultural Products Division
Abbott Laboratories
North Chicago, Illinois 60064

Lot 5209

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REPT

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U.S. Federal Insecticide, Fungicide and Rodenticide Act
as amended, for use as a registered insecticide
EPA Reg. No. 275-37

ENVIRONMENTAL HAZARDS

Keep out of lakes, ponds or streams. Do not contaminate water by cleaning equipment or disposal of wastes.

Beneficial Insects

Honeybees foraging treated areas are not harmed by Dipel 2X use.

Dipel 2X does not interfere with the activities of beneficial and predaceous arthropods in pest management programs.

Directions for Use

Do not violate Federal law to use this product in a manner inconsistent with its labeling.

Refer to Package Enclosure for crops, rates and general directions.

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: Triple rinse (or equivalent). Then 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.

WETTABLE POWDER BIOLOGICAL INSECTICIDE

Active Ingredient:

Bacillus thuringiensis, var. *israeli*, 32,000 International Units of Potency per mg. (14.62 Billion International Units per pound)

Inert Ingredients 93.6%

KEEP OUT OF REACH OF CHILDREN

CAUTION

List No. 8200

EPA Registration No. 275-37

EPA Est. No. 33762-1A-1

Chemical Division
Products Division
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North Chicago, Illinois 60064