

dipel[®]
2X
WORM KILLER

01-3158/R3-75-1184

**WETTABLE POWDER
BIOLOGICAL INSECTICIDE**

Active Ingredient:

Bacillus thuringiensis, var. *kurstaki*,
32,000 International Units of Potency per mg
(14.52 Million International Units
per pound) 6.4%
Inert Ingredients 93.6%

**KEEP OUT OF REACH
OF CHILDREN**

CAUTION

E.P.A. Registration No. 275-37
E.P.A. Est. No. 33762-1A-1

STORAGE AND DISPOSAL

See container label.

BENEFICIAL INSECTS

Honeybees foraging treated areas are not
harmful 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.

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

- 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 sprayer-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 types (Peas, Beans, Lentils, etc., dry or succulent) Potatoes, Cucurbits	Loopers Hornworms Imported Cabbageworm Diamondback Moth Green Cloverworm Webworm Armyworms*	1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2

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

Tomatoes Peppers Eggplant	Loopers Hornworms Tomato Fruitworm** Variegated Cutworm Sawfly Caterpillars Armyworms**	1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2
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**Apply weekly in a preventive program.
**DIPEL 2X 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.	Ringworm Complex* Melonworms	1/4 to 1/2 1/4 to 1/2
Tobacco	Tobacco Budworm Hornworms Loopers	1/4 to 1/2 1/4 to 1/2 1/4 to 1/2

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

Safflower, Sugar beets, Mints	Loopers Sawfly Caterpillar	1/4 to 1/2 1/4 to 1/2 1/4 to 1/2
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Crop	Pest	Pounds/Acre
Soybeans, Sunflowers, Peas	Loopers Green Cloverworm Velvetbean Caterpillar Podworm*	1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2

*DIPEL 2X suppresses podworms under most management conditions.

Alfalfa, Pastures, Hay, Small Grains and Forage Crops	Loopers Alfalfa Caterpillar European Skipper (Lesser Skipper)	1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2
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Rangeland	Range Caterpillar	1/4 to 1/2
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Use a minimum of 1/2 to 1 gallon water per acre.

Cotton	Tobacco Budworm** Cotton Bollworm** Loopers**	1/4 to 1/2 1/4 to 1/2 1/4 to 1/2
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**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 returns are ac-
ceptable. If 15% or more terminals have eggs, add 1/4 lb. Alchlor
dureform (Galecron® or Fundax®) per acre to 1/4 lb. DIPEL 2X
to increase chloroform to 1/2 lb. AI if needed.

Once beneficial insects are no longer a factor, DIPEL 2X (at 1/4 to
1/2 lb./acre) may be tank mixed with methomyl (Monathol® or Nu-
dus®) at 225 to 875 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 for all com-
mercial and usage cautions. Chloroform is restricted to aerial
application and to states where registered.

**Full plant coverage needed.

The mixture of B.T. with chloroform for inhibiting the growth of
lepidopterous larvae on plants is covered by Abbott U.S. patent
3,837,813.

Turf	Soil Webworm	1 to 2
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Crop	Pest	lbs./100 Gals.
Flowers and Ornamentals (ground only)	Loopers Tobacco Budworm Onionworm Looper Dormant Leafroller Diamondback Moth Armyworms* Ello Moth (Hornworm) 1st Moth Oleander Moth	1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2 1/4 to 1/2

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

**DIPEL 2X FOR STORED
AGRICULTURAL COMMODITIES**

GRAINS, SOYBEANS, SUNFLOWER SEED, CROP
SEED, CONDIMENTAL SEEDS, SPICES, HERBS,
Birdseed and Popcorn.

Food	Rate
Indian Meal Moth Almond Moth	1/4 lb./100 lb.* (undiluted or diluted)*

*As a surface treatment, apply 1/4 lb. DIPEL 2X to 60 sq. ft. of water
per 500 sq. ft. of grain surface area. Mix into top 4 inches.

For the control and prevention of these pests, apply DIPEL 2X in
a constantly agitated water suspension to the top four inch per
face layer of grain in the bin. Use a sprayer with 1/4 inch or larger
nozzle to apply the dosage into the grain stream as the last (top) four inch

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ACCEPTED
APR 24 1985
Under the authority of the
Federal Insecticide, Fungicide,
and Rodenticide Act
EPA Reg. No. 275-37

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PM 17

Draft Labeling
275-37
March 14, 1985
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DIPEL 2X for Fruits, Nuts, Trees, Ornamentals

Crop	Pest	Pounds/Acre
Grapes, Small	Grape of Suckercorner (ground only)	1/2 to 1/2
Fruit, Citrus	Grape Leafhopper	1/2 to 1/2
and Bush	Arctian Sphex Moth (Hemivorm)	1/2 to 1/2
Berries	Salmonid Caterpillar (ground only)	1/2
	Onionworm Leafroller (ground only)	1/2 to 1/2
	Loopers	1/2 to 1/2
	Pounds/100 Gallons*	Pounds/Acre
	(Standard Application)	(Standard Application)
Stone Fruit,	Redhumped Caterpillar	1/2 to 1/2
Nut Trees,	Tort Caterpillars	1/2 to 1/2
Pomegranates	Onionworm Leafroller	—
	Fall Webworm	1/2
	Walnut Caterpillar	1/2 to 1/2
	Cardinal	1/2 to 1/2
Pome Fruit ¹	Cardinal	1/2 to 1/2
	Gypsy Moth	1/2
	Variegated Leafroller	—
	Redhumped Leafroller	—
	Tufted Apple Budworm	1/2 to 1/2
	Tort Caterpillars	1/2 to 1/2
Citrus ²	Fireworm Leafroller	—
	Orange Web	—
Tropical Fruit ³	Hemivorm	—
	Leafrollers	1/2 to 1/2
	Onionworm Looper	—
	Loopers	—
Forest, Shade,	Gypsy Moth	1/2
Sugar Maple,	Bayworm	1/2 to 1/2
Trees and	Redhumped Caterpillar	1/2 to 1/2
Ornamentals	Spring and Fall Cardinals	1/2 to 1/2
	Fall Webworm	1/2
	Elm Spanner	1/2 to 1/2
	Tort Caterpillars	1/2 to 1/2
	California Caterpillar	1/2 to 1/2
	Pine Butterfly	1/2
	Spruce Budworm ⁴	1/2
	Saddle Prominent Caterpillar	—
	Douglas Fir Tussock Moth	1/2
	Western Tussock Moth	1/2 to 1/2
	Trunk Leafroller	—
	Blackheaded Budworm	1/2
	Munich Webworm	1/2 to 1/2
	Jack Pine Budworm	1/2 to 1/2
	Saddleback Caterpillar	—

*Rate for hydraulic sprayer. For most bladders mix the applicable amount (lbs) in 10 gallons of water.

**For aerial application, use one to two 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.

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

²Use 100 to 400 gallons/acre.

³Use at least 200 gallons/acre.

⁴Use against populations below 25 larvae per 10 inch branch tip. Use a minimum of 1/2 gallon/acre by air.

Apply to sugar and other fruit. Mix 1/20 lb DIPEL 2X per gallon of water. Apply 0.6 pint of this mixture per bushel of grain as it is stored in storage. Or, sprinkle the mixture 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.

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 an infestation occurs.

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.

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

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

PEANUTS

Pest	Rate
Indian Meal Moth, Almond Moth	1/2 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 1/2 lbs 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 pressure and nozzles sufficient to handle this suspension.

Before filling the warehouse, clean thoroughly, then spray inside or 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	5/8 oz/100 lbs*

*Apply 0.2 ounce (approximately 1/2 teaspoonful) of DIPEL 2X in one quart of water per 100 pounds of tobacco as a fine mist spray. Avoid over-spraying. 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 these 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, rebanded or restock sticks, half up tobacco and spray loose leaves.

For tobacco that has been stored over three weeks, apply at first sign 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, treat most 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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