

THURICIDE[®]

32B

MICROBIAL INSECTICIDE CONCENTRATE

ACTIVE INGREDIENT
Bacillus thuringiensis Berliner, spore and vegetative cells, 1.0%
Inert ingredients, 99.0%

1/2 oz. (14.3 g) per gallon of water

KEEP OUT OF REACH OF CHILDREN CAUTION

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
Irritant to eyes, nose and throat.

STORE IN A COOL PLACE

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 Store in a cool place. Activity may be impaired by storage at temperatures above 90°F. Protect from freezing.

DISPOSAL Do not reuse empty container. Destroy or discard in a safe place.

USE Apply at first sign of infestation when worms are small and appear at weekly intervals as needed to maintain control. Thuricide 32B attacks the larval gut and must be eaten by the insect to be effective. Thorough underleaf coverage is therefore essential for best results. After using Thuricide 32B, worms stop feeding and

die within 2-3 days. Since the active ingredient, Bacillus thuringiensis, is exempt from tolerance requirements, Thuricide 32B may be applied up to the day of harvest.

MIXING Always shake or stir THURICIDE 32B thoroughly before use. Pour recommended amount of THURICIDE 32B onto surface of water in a nearly filled spray tank. Maintain agitation. Use the higher rates against very heavy worm infestations, or where it is difficult to get good coverage due to rank foliage. Do not allow dilute sprays to stand in the tank for more than 12 hours. Combinations with chemical insecticides, fungicides, spreader stickers, and stickers in the tank are generally not deleterious to THURICIDE 32B if the mix is used promptly.

GROUND APPLICATION Use recommended amount of Thuricide 32B in a minimum of 5 to 50 gallons of water, depending on the type of crop and requirements of state regulations. Add a sticker, adhesive or deposit builder where heavy dew or rain is encountered.

GROUND APPLICATION TREES Use recommended amount of Thuricide 32B in 100 gallons of water in high pressure, high gallonage hydraulic sprayers. Wet foliage thoroughly with spray but not to the point of excessive runoff. For mist blowers use recommended amount in 10 gallons of water. To prevent wash-off by rain, add a sticker to the finished spray.

AERIAL APPLICATION Use recommended amount of Thuricide 32B in 5 to 20 gallons of water. A sticker should be added under conditions of heavy dew or rain. Apply early morning or evening when the air is calm.

NOTICE Sandoz Inc. makes no warranty, express or implied, including the warranties of merchantability and/or fitness for any particular purpose, concerning this material, except those which are contained on this label.

RECOMMENDATIONS Thorough coverage is essential when using Thuricide 32B Microbial Insecticide Concentrate.

Sandoz Inc.
Crop Protection
480 Camino Del Rio So.
San Diego, California 92108

1127303

Crop	Pest	Rate Per
ALFALFA	Alfalfa caterpillar	
ALMONDS	Acornworm caterpillar	
ALMONDS - CHERRIES	Terrestrial caterpillar	
Apply when caterpillars are actively feeding (2nd 4th instar)		
APPLES - PEARS	Redbanded leafroller	1/2
Apply when eggs or larvae are present on first apple. Use as part of the normal cover spray program until pest is adequately controlled.	Tufted apple budmoth	
	Variagated leafroller	
	Tent caterpillar	
	Fruit tree leafroller	
	Gypsy moth	
BROCCOLI BRUSSELS SPROUTS	Diamondback moth	1/2
CABBAGE CAULIFLOWER COLLARDS	Imported cabbage worm	
KALE MUSTARD GREENS TURNIP GREENS	Green Cloverworm	
	Cabbage looper	
BEANS BEETS CARROTS CELERY	Cabbage looper	1/2
CHARD CHINESE CABBAGE (Choy sum)		
COS LETTUCE ENDIVE ESCAROLE		
GARLIC KOHLRABI LENTILS LETTUCE		
ONIONS PARSLEY RADISHES SPINACH	Cabbage looper	1/2
SQUASH		
CUCUMBERS MELONS	Cabbage looper	1/2
Begin treatment when worms are small to avoid damage and starting to the crop.		
EGGPLANT PEPPERS	Tomato hornworm	1/2
	Tomato fruitworm	
	Cabbage looper	
CURRENTS BLUEBERRIES CANEBERRIES	Omnivorous leafroller	1/2
(BLACKBERRIES DEWBERRIES)		
RASPBERRIES		
Apply by ground equipment only. Begin treatment as soon as possible after hatching and before larvae are protected by leaf folds.		
COTTON	Tobacco budworm Cotton bollworm	1/2
For the suppression of light to moderate infestations, apply at first sign of egg laying or newly hatched worms (1st and 2nd instar). Reapply at 3-5 day intervals to sustain worm suppression or until adequate reduction of worm population is achieved. Use Thuricide under a pest management program that includes insect scouting. If heavy worm populations occur, it may be necessary to apply an insecticide with rapid knockdown and good larvicidal activity as a replacement. Apply from 5-15 gallons total spray per acre with ground equipment from 2-5 gallons total spray per acre with aerial equipment.		

DIRECTIONS FOR USE OF TANK MIX COMBINATIONS OF THURICIDE 32B AND CHLORDIMEFORM (FUNDAL GALECRON[®] SP OR 4EC)

Crop	Insecticide	Pest	Rate Per
COTTON	Thuricide 32B	Tobacco budworm	1/2
	+	Cotton bollworm	1/2
	chlordimeform SP		1/2
	or		1/2
	chlordimeform 4EC		1/2

Use Thuricide 32B plus chlordimeform for a combined control of tobacco budworm and cotton bollworm. Use the above rates for suppression of light infestations and high rates for suppression of moderate infestations. Apply at first sign of egg laying or newly hatched worms. Reapply at 3-5 day intervals until suppression or until adequate worm reduction is achieved. Apply from 2-5 gallons total spray per acre with ground equipment. For restrictions, safety precautions and directions contained on the FUNDAL GALECRON[®] labels.

DIRECTIONS FOR USE OF TANK MIX COMBINATIONS OF THURICIDE 32B AND ELCAR INSECTICIDE (EPA REG NO. 1127312) IN THE SOUTHWEST ONLY

Crop	Insecticide	Pest	Rate Per
COTTON	THURICIDE 32B	Cotton bollworm	1/2
	+		1/2
	ELCAR	Tobacco budworm	1/2

Use THURICIDE 32B in combination with ELCAR for control of tobacco budworm and cotton bollworm. Use the above rates for suppression of light infestations and high rates for suppression of moderate infestations. Apply at first sign of egg laying or newly hatched worms. Reapply at 3-5 day intervals until suppression or until adequate worm reduction is achieved. Apply from 2-5 gallons total spray per acre with ground equipment. For restrictions, safety precautions and directions contained on the ELCAR label.



Crop	Pest	Ozs. Per Acre
COTTON	Cabbage looper	1/2 1
PEANUTS	Cabbage looper	1/2 1/2
	Vermetus rectifoliar	1/2 1
	Podworms	1/2 1/2
POTATOES	Cabbage looper	1/2 1/2
SOYBEANS	Soybean looper	1/2 1/2
	Cabbage looper Green	1/2 1/2
	cloverworm Vermetus	1/2 1/2
	cutworm	1/2 1
	Podworms	1/2 1
SUGARBEETS	Cabbage looper	1/2 1
	Omnivorous leafroller	1/2 1
TOBACCO	Cabbage looper	1/2 1/2
	Tobacco budworm	1/2 1/2
	Tobacco hornworm	1/2 1/2
TOMATOES	Cabbage looper	1/2 1/2
	Tomato hornworm	1/2 1/2
	Tomato fruitworm	1/2 1
	Rindworm complex	1/2 1/2
	Grape leaf folder	1/2 1
WATERMELONS		
GRAPES		
Start treating as soon as possible after hatching and before larvae are protected by leaf folds. Apply by ground equipment in up to 200 gallons total spray per acre to obtain thorough coverage of leaf surfaces.		
GRAPES	Omnivorous leafroller	1/2 1/2
MINT	Cabbage looper	1/2 1
STRAWBERRIES	Cabbage looper	1/2 1
	Rough skinned cutworm	1/2 1
SUGAR MAPLE	Spring & Fall cankerworm	1/2 1
	Fall webworm	1/2 1
	Tent caterpillar	1/2 1
	Gypsy moth	1/2 1
PEACHES NECTARINES	Redhumped caterpillar	1/2 1
	Tent caterpillar	1/2 1
	Omnivorous leafroller	1/2 1
BANANAS (Hawaii)	Banana skipper	1/2 1
ORANGES	Fruit tree leafroller	1/2 1
	Orange dog	1/2 1/2
ORANGES	Citrus cutworm	1/2 1
FILBERTS	Filbert leafroller*	1/2 1
	Tent Caterpillar**	1/2 1
PECANS	Redhumped caterpillar	1/2 1
	Fall webworm	1/2 1
	Tent caterpillar	1/2 1
WALNUTS	Redhumped caterpillar	1/2 1/2
	Tent caterpillar	1/2 1
	Fall webworm	1/2 1
	Omnivorous leafroller	1/2 1
Use 100 gallons water minimum per acre when using ground equipment and 10 gallons water minimum per acre by aircraft.		

SHADE TREES ORNAMENTALS & FOREST

Pest	Ozs. per Acre	DIRECTIONS FOR USE
Spring and Fall cankerworm	1/2 1	Apply when leaf expansion reaches 40% 50% as infestation warrants. If eggs hatch over a long period of time or if reinfestation occurs spray about 14 days after first application.
Elm spanworm	1/2 1	
Tent caterpillars	1/2 1	
Gypsy moth	1	
Spruce budworms	1/2 1	Apply when most larvae are 3rd 4th instar. Also consider the opening of the bud cap to ensure foliage exposure.
	1/2 1	
Douglas fir tussock moth	1/2 1	Apply after eggs have hatched and early instar larvae are feeding on exposed foliage.
Jack pine budworm	1/2 1	
Bagworm	1/2 1	
California oak moth	1/2 1	
Western tussock moth	1/2 1	
Fruit tree leafroller	1/2 1	
Mimosa webworm	1/2 1	
Redhumped caterpillar	1/2 1/2	
Fall webworm	1/2 1	

Aerial Application Forest: Mix the recommended amount of Thuricide 32B with water to obtain at least one half gallon of spray mix per acre. The addition of an evaporation retardant such as molasses, Gargill's Insecticide Base, polyethylene glycol E 400 or a film forming sticker to the spray mix can improve spray deposition. Best results are obtained when THURICIDE 32B is applied to dry foliage with a calibrated aircraft capable of obtaining droplet sizes below 300 microns and preferably in the range of 50 150 microns.

STORED SOYBEANS GRAINS

Indian meal moth
Almond moth

To control and prevent Indian meal moth and Almond moth infestations of stored soybeans and grains, prepare a spray mixture which includes one gallon of water for every 3 ounces of THURICIDE 32B. The spray mixture may be applied either by treating the top 4 inches of grain as it is being augered into storage (applying 0.6 part of mixture per bushel in the grain stream), or by treating the surface of grain after it is in the bin. The table below can be used as a guide in determining the total amount of THURICIDE 32B needed according to the bin diameter or the number of bushels to be treated.

Bin Diameter (ft.)	Surface Area (sq. ft.)	Bushels (to 4 inch depth)	THURICIDE 32B Rate
8	50	13	3 oz
12	113	30	7 oz
16	201	53	12 oz
20	314	84	17 oz
24	452	120	26 oz
28	615	163	36 oz
32	804	214	46 oz

To insure thorough coverage when making applications to the grain surface after it is in the bin, apply spray mixture in three applications. Mix the grain with a scoop or rake to a depth of 4 inches after each application.

Stored grain may be treated anytime, but for best results, treat grain at the time it is placed into storage or shortly thereafter, or in the early spring prior to egg laying. Full season control is normally experienced. Re treat only if reinfestation occurs.

For the protection of bagged grain, apply spray mixture to entire grain mass, and mix thoroughly prior to bagging. THURICIDE 32B at 3-4 qt. per 10 gallons of water will treat approximately 100 bushels.

Treated grain may be used at any time after treatment.

GREENHOUSE APPLICATION

THURICIDE 32B may also be used in the greenhouse and on flowers at 1-4 1-2 qt. per 100 gallons of water for control of listed insects on crops on this package label.

1) To achieve adequate coverage of large trees or dense foliage, aerial application of not less than 15 gpa is preferred.

2) Suppression only.

3) FUNDAL-4EC (EPA Reg. No. 2139-100) Nor Am Ag Prod. Inc.
FUNDAL-SP (EPA Reg. No. 2139-98) Nor Am Ag Prod. Inc.

4) GALECRON-4EC (EPA Reg. No. 100-551 AA) Ciba Geigy Corp.
GALECRON- (EPA Reg. No. 100-554 AA) Ciba Geigy Corp.