11273-2
PM 17
1-9-4

ACCEPTED
NOV 2 1984
...Insecticide,
...Act,
...cide
11273-2

thuricide®-HPC

HIGH POTENCY AQUEOUS CONCENTRATE

SPECIMEN LABEL

ACTIVE INGREDIENTS: Bacillus thuringiensis Berliner, potency of 4,000 International Units (at least 6 million viable spores) per milligram*	0.8%
Petroleum hydrocarbon solvent	3.0%
INERT INGREDIENTS:	96.2%
	100.0%

*Equivalent to 4.0 billion International Units per quart.

KEEP OUT OF REACH OF CHILDREN

CAUTION

AVOID INHALATION OR CONTACT WITH EYES OR OPEN WOUNDS. APPLY THIS PRODUCT ONLY AS SPECIFIED ON THIS LABEL.

STORE IN A COOL PLACE

Activity may be impaired by storage at temperatures above 90° F. Protect from freezing.

DIRECTIONS FOR USE

GENERAL: Apply at first sign of infestation when worms are small and repeat at weekly intervals as needed to maintain control. Thuricide HPC attacks the larval gut and must be eaten by the insect to be effective. Thorough underleaf coverage is, therefore, essential for best results. After eating Thuricide HPC, worms stop feeding and die within 2-3 days. Since the active ingredient, Bacillus thuringiensis, is exempt from tolerance requirements, Thuricide HPC may be applied up to the day of harvest.

MIXING: Always shake or stir Thuricide HPC thoroughly before use. Pour recommended amount of Thuricide HPC 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 HPC if the mix is used promptly.

GROUND APPLICATION: Use recommended amount of Thuricide HPC 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 HPC 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 washoff by rain add a sticker to the finished spray.

AERIAL APPLICATION: Use recommended amount of Thuricide HPC 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.

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

NOTICE: Sandoz, Inc. makes no warranty, expressed 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 HPC Concentrate.

Sandoz, Inc.
Crop Protection

Crop	Pest	Qts. per acre
ALFALFA	Alfalfa caterpillar	¼
ALMONDS[1]	Redhumped caterpillar	1-2
ALMONDS,[1] CHERRIES[1]	Tent caterpillar	1-2
Apply when caterpillars are actively feeding (2-4th instar).		
APPLES,[1] PEARS[1]	Redbanded leafroller, Tufted apple budmoth, Variegated leafroller, Tent caterpillar, Fruit tree leafroller, Gypsy moth	1-2
Apply when eggs or newly hatched larvae first appear. Continue applying as a part of the normal cover spray program until pest is adequately controlled.		
BROCCOLI, BRUSSELS SPROUTS, CABBAGE, CAULIFLOWER, COLLARDS, KALE, MUSTARD GREENS, TURNIP GREENS	Diamondback moth	½-1
	Imported cabbage worm	½-1½
	Green Cloverworm	½-1½
	Cabbage looper	1-2
BEANS, BEETS, CARROTS, CELERY, CHARD, CHINESE CABBAGE (Choy sum), COS LETTUCE, ENDIVE, ESCAROLE, GARLIC, KOHLRABI, LENTILS, LETTUCE, ONIONS, PARSLEY, RADISHES, SPINACH, SQUASH	Cabbage looper	1-2
CUCUMBERS, MELONS	Cabbage looper	1-2
Begin treatment when worms are small to avoid damage and scarring to the harvested crop.		
EGGPLANT, PEPPERS	Tomato hornworm,	½-1½
	Tomato fruitworm[2], Cabbage looper	1-2
CURRANTS, BLUEBERRIES, CANEBERRIES (BLACKBERRIES, DEWBERRIES, RASPBERRIES)	Omnivorous leafroller	1-2
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 larvae). Reapply at 3-5 day intervals to sustain worm suppression or until adequate reduction of worm population is achieved. Use Thuricide HPC under a pest management program that includes close 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 and from 2-5 gallons total spray per acre with aerial equipment.

DIRECTIONS FOR USE OF TANK-MIX COMBINATIONS OF THURICIDE[1] HPC AND CHLORDIMEFORM (FUNDAL[1] OR GALECRON[1] SP OR 4EC).

Crop	Insecticide	Pest	Rate per acre
COTTON	Thuricide HPC	Tobacco budworm	½-1 pt.
	+	Cotton bollworm	+
	chlordimeform SP		¼-½ lb.
	or		or
	chlordimeform 4EC		¼-½ pt.

Use Thuricide HPC plus chlordimeform for a combined ovicide/larvicide effect. Use the low rates for suppression of light infestations, and the high rates for suppression of moderate infestations. Apply at first sign of egg laying or newly hatched worms. Reapply at 3-5 day intervals to sustain suppression, or until adequate worm reduction is achieved. Apply from 2-5 gallons total spray per acre with aerial equipment. Follow all restrictions, safety precautions and directions contained on the FUNDAL or GALECRON labels.

DIRECTIONS FOR USE OF TANK-MIX COMBINATIONS OF THURICIDE HPC AND ELCAR[1] INSECTICIDE (EPA REG. NO. 11273-17) IN THE SOUTHWEST ONLY

Crop	Insecticide	Pest	Rate per acre
COTTON	Thuricide HPC	Cotton bollworm	1 pt.-1 qt.
	+	Tobacco budworm	+
	Elcar		1/16-⅛ lb

Use THURICIDE HPC in combination with ELCAR for an increased larvicide effect. Use the low rate combination for light infestations, and use the high rate combination for control of moderate infestations. Apply at first sign of egg deposition or newly hatched worms, and repeat at 3-7 day intervals, as long as egg deposition continues.

COTTON	Cabbage looper	1-2
PEANUTS	Cabbage looper, Velvetbean caterpillar	½-1½
	Podworms[2]	1-2
POTATOES	Cabbage looper	1-2

Crop	Insecticide	Pest	Rate per acre
SOYBEANS		Soybean looper	1 - 1½
		Cabbage looper Green cloverworm Velvetbean caterpillar	½ - 1½
		Podworms[2]	1-2
SUGARBEETS		Cabbage looper Omnivorous leafroller	1-2
TOBACCO		Cabbage looper Tobacco budworm,	1 - 1½
		Tobacco hornworm	½ - 1½
TOMATOES		Tomato hornworm	½ - 1½
		Cabbage looper Tomato fruitworm[2]	1-2
WATERMELONS (Florida)		Rindworm complex	½ - 1½
GRAPES		Grape leaf folder	1-2
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		Omnivorious leafroller	½ - 1½
MINT		Cabbage looper	1-2
STRAWBERRIES		Cabbage looper Roughskinned cutworm	1-2
Use 20 gallons water minimum per acre when using ground equipment and 5 gallons water minimum per acre by aircraft.			
SUGAR MAPLE		Spring & Fall cankerworm Fall webworm Tent caterpillar Gypsy moth	1-2
PEACHES, NECTARINES		Redhumped caterpillar Tent caterpillar Omnivorous leafroller	1-2
BANANAS (Hawaii)		Banana skipper	1-2
Use calibrated ground equipment with adequate water to apply to point of runoff.			
ORANGES		Fruit tree leafroller	1-2
		Orange dog	½ - 1
ORANGES		Citrus cutworm	1-2
Use 50 gallons water minimum to 600 gallons maximum per acre when using ground equipment, and 10 gallons water minimum per acre by aircraft.			
FILBERTS'		Tent caterpillar'	1-2
'Apply when caterpillars are actively feeding (2-4 in instar). "Apply at 10% egg hatch.		Filbert leafroller"	1-2
PECANS'		Redhumped caterpillar Fall webworm Tent caterpillar	1-2
WALNUTS'		Tent caterpillar Fall webworm Omnivorous leafroller	1-2
Use 100 gallons water minimum per acre when using ground equipment, and 10 gallons water minimum per acre by aircraft.		Redhumped caterpillar	¼ - 1
KIWI		Omnivorous leafroller Fruittree leafroller Cabbage looper	1 - 2
SHADE TREES, ORNAMENTALS, FOREST		Spring & Fall cankerworm Fall webworm Tent caterpillar	½ - 1
		Redhumped caterpillar	½ - 2
		Oakmoth larvae Gypsy moth[1]	1-2

STORED SOYBEANS, GRAINS

Indian meal moth
Almond moth

To control and prevent Indian meal moth and Almond moth infestations of stored grains and soybeans, prepare a spray mixture which includes one gallon of water for every 6 ounces THURICIDE HPC. 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 pint 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 HPC 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 HPC Rate
8	50	13	6 oz.
12	113	30	14 oz.
16	201	53	24 oz.
20	314	84	1 qt., 2 oz.
24	452	120	1 qt., 20 oz.
28	615	163	2 qts., 8 oz.
32	804	214	2 qts., 28 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 any time, 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. Retreat only if reinfestation occurs.

For the protection of bagged grain, apply spray mixture to entire grain mass, and mix thoroughly prior to bagging. THURICIDE HPC at 1½ qts. per 10 gallons of water will treat approximately 100 bushels.

Treated grain may be used at any time after treatment.

GREENHOUSE APPLICATION:

THURICIDE HPC may also be used in the greenhouse and on flowers at ½-1 qt. per 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® SP (EPA Reg. No. 100-554-AA) Ciba-Geigy Corp.
5) GYPSY MOTH: Aerial Application

THURICIDE HPC may also be applied by air t prevent excessive defoliation by gypsy moth. For best results, spray when leaf expansion reaches 40%-50%, and respray 14 days later. Use two quarts of THURICIDE HPC in 1-4 gallons finished spray per acre. Incorporate in the spray mix an evaporation retardant such as molasses, Cargill's Insecticide Base polyethylene glycol E-400, and a film-forming sticker. To obtain thorough coverage use spray equipment suitable to deliver droplets with an average diameter of less than 300 microns.

STATE SLN (24C)

The following are based on Special Local Need registrations only.

ARIZONA EPA SLN NO. AZ-780008

Directions for use of tank-mix combination of Thuricide HPC and Methomyl (Nudrin® or Lannate®) on cotton

Crop	Insecticide	Pest	Rate Per Acre
COTTON	Thuricide HPC	Tobacco budworm, Cotton bollworm	1.3 pts.
	Methomyl	Tobacco budworm, Cotton bollworm	0.45 to 0.675 lbs. a.i.

Apply at first sign of egg laying and newly hatched worms. Reapply at 3-6 day intervals as long as the worms are adequately suppressed.
®Nudrin (EPA REG. NO. 201-347) T.M. Shell Chem. Co.
®Lannate (EPA REG. NO. 352-342) T.M. E.I. DuPont Co.

Crop	Pest	Qts. Per Acre
CALIFORNIA	**EPA SLN NO. CA-780121**	
AVOCADOS	Amorbia moth, Omnivorous leafroller, Omnivorous looper, Orange tortrix	To 4

Applications may be made twice per year. Do not use in less than 10 gallons of water by aircraft nor in less than 50 gallons of water by ground rig. A special permit must be obtained from the county agricultural commissioner prior to this use.