BACTOSPEINE®

FLOWABLE CONCENTRATE

ACTIVE INGREDIENT: **Bacillus thuringiensis** Berliner, var. **kurstaki,** primary powder fermentation product, potency of 8,800 International Units per milligram of product (equivalent to 35 billion International Units per gallon of product) 10%

INERT INGREDIENTS: 90%

100%

KEEP OUT OF REACH OF CHILDREN
CAUTION

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS: Avoid inhalation or contact with eyes or open wounds.

ENVIRONMENTAL HAZARDS

Avoid direct application to lakes, ponds, or streams.
Do not contaminate water by cleaning of equipment or disposal of wastes.

STORAGE AND DISPOSAL

STORAGE: Tightly reclose containers of unused Bactospeine. Store in cool place. Activity may be impaired by storage at temperatures above 90°F. Protect from freezing.

DISPOSAL: Drums can be used for non-food products after thorough cleaning with water. Smaller sized containers should not be reused. Perforate or crush and discard container according to local trash disposal regulations and in a safe place.

DIRECTIONS FOR USE

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

Bactospeine (**Bacillus thuringiensis**) Flowable Concentrate provides best control when caterpillars are newly hatched (1st or 2nd instar) and most susceptible to the product which must be eaten. Good leaf coverage is essential to achieve effective insect control. Higher rates are generally necessary when infestations are heavy and foliage is dense.

For armyworm control, apply to plants and thoroughly to adjacent soil when larvae are young.

To obtain a suitable mixture with water, pour the recommended amount into a 1/2 filled tank and agitate. Fill tank and maintain agitation until the mixing process is complete. Bactospeine is compatible with various insecticides, fungicides, spreaders, and stickers except those that are highly alkaline in nature. Reagitate if dilute spray is allowed to stand for more than 6 hours.

For most trees, the recommended amount of product may be applied by high pressure hydraulic sprayers in 100 gallons of water per acre. Cover foliage thoroughly, but avoid runoff. Mist blower applications may use 10-20 gallons of water per acre.

Spreaders and stickers improve coverage and are recommended.

For vine, pome, citrus and tropical fruits, use recommended amount per 100 gallons water and apply 100 to 500 gallons of spray dilution per acre.

Aerial applications should use recommended rates in ¼ to 10 gallons of water per acre during early morning or evening hours when winds are low. Spray systems which produce a 50-300 micron droplet size are preferable.

For small quantity, use 2 teaspoonfuls per gallon of water to provide an application rate of 1 qt/acre in 100 gallons of water.

NOTE: Because the active ingredient, **Bacillus thuringiensis,** is exempt from tolerance requirements, this product may be applied up to the day of harvest and in storage.

NOTICE: Local conditions may affect the use of Bactospeine. Consult State Agricultural Extension or Experiment Station Specialists for specific recommendations related to local crop protection problems. Biochem Products makes no warranty, express or implied, including the warranties of commercially acceptable quality and/or fitness for any particular purpose concerning this material, other than those which are contained on this label.

Manufactured by:

Biochem Products

A Division of
Salsbury Laboratories, Inc.
A Member of
the Solvay Group
Montchanin, Delaware 19710

EPA Registration No.
43382-5

EPA Est. No.
43382-FR-01

Net Contents:

Lot No.

Product of France

ACTOSPEINE®

FLOWABLE CONCENTRATE

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KEEP OUT OF REACH OF CHILDREN
CAUTION

PRECAUTIONARY STATEMENTS

ZARDS TO HUMANS: Avoid inhalation or contact with eyes or open wounds.

ENVIRONMENTAL HAZARDS

Avoid direct application to lakes, ponds, or streams.
Do not contaminate water by cleaning of equipment or disposal of wastes.

STORAGE AND DISPOSAL

Tightly reclose containers of unused Bactospeine. Store in cool place. Activity may be impaired by storage at temperatures above 90°F. Protect from freezing.

Drums can be used for non-food products after thorough cleaning with water. Smaller sized containers should not be reused. Perforate or crush and discard container according to local trash disposal regulations and in a safe place.

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APPLICATION RATES FOR BACTOSPEINE® FC

Crop	Pest	Quarts/Acre
Field and Greenhouse vegetables, including		
Broccoli, Spinach, Collards,	Armyworms	1 - 2
Cauliflower, Kale, Lettuce,	Tomato fruitworm/Corn earworm/Bollworm	1 (every 5-7 days)
Turnips, Turnip greens, Beets,	Variegated cutworm	1
Celery, Mustard greens, Beans,	Salt marsh caterpillar	1/4 - 1
Cabbage, Brussel Sprouts, Peas,	Mimosa webworm	1/4 - 1
Chinese Cabbage Sweet Potato,	Tobacco budworm	1/4 - 1
Kohlrabi, Endive, Sweet Corn,	Loopers, Melonworm, Pickleworm	1/4 - 1
Tomatoes, Peppers, Eggplant,	Diamondback moth	1/4 - 3/4
Escarole, Lentils, Potato,	Imported cabbageworm	1/4 - 3/4
Spinach, Carrots, Cucumbers,	Green cloverworm	1/4 - 3/4
Melons, Squash	Hornworm	1/4 - 3/4
Tobacco	Tobacco budworm	1/2 - 1
	Loopers	1/2 - 1
	Hornworms	1/4 - 3/4

To control tobacco moth during storage use 3 fluid oz or 6 tablespoonfuls in one gallon water per 400 lbs tobacco uniformly applied as a spray mist to leaf surfaces before bundling or to opened bundles and to walls and floors of storage area

Safflower, Sugar beets	Tobacco budworm/bollworm	1/4 - 1
Mints, Peanuts, Alfalfa,	Loopers	1/4 - 1
Soybeans, Sunflowers, Hay,	Salt marsh caterpillar	1/4 - 1
Pastures, Small grains,	Velvetbean caterpillar	1/4 - 1
Forage crops	Green cloverworm	1/4 - 1
	Skippers	1/4 - 1/2
	Alfalfa caterpillar	1/8 - 1/4
Turf,	Sod webworm	2 - 4
Rangeland	Rangeland caterpillar	1/8 - 1/4
Grapes, Blueberries,		
Blackberries, Currants,	Grapeleaf skeletonizer	1/3 - 1
Raspberries,	Loopers, Salt marsh caterpillar	1/3 - 1
Strawberries,	Grape leaffolder/leafrollers	1/3 - 1
Dewberries	Hornworms	1/4 - 3/4
Cotton	Loopers	1/3 - 1
	Tobacco budworm	1/4 - 1
	Bollworm	1/4 - 1

Apply at first sign of 1st and 2nd instar budworm or bollworm larvae. Use at least 7 gallons total spray with ground equipment or 2-5 gallons/acre with aerial equipment. To continue worm suppression reapply at 3-5 day intervals or use scouting report recommendations

Bactospeine at .25 to 1.0 quart/acre may be tank mixed with methomyl at .225 to .675 lbs. active ingredient (AI)/acre to suppress infestations of early instar larvae

Crop	Pest	Quarts/100 Gallons (Ground Application)	Quarts/Acre (Air Application)
Peaches, Plums,	Gypsy moth	1/2 - 2	1 - 2
Cherries, Walnuts,	Walnut caterpillar, Loopers	1/2 - 1	1/2 - 1
Almonds, Pecans,	Leafrollers, Green Fruitworm	1/2 - 1	1/2 - 1
Filberts,	Casebearers	1/4 - 1	1/2 - 1
Apples, Pears,	Tent caterpillars	1/4 - 1	1/2 - 1
Avocados	Redhumped caterpillar	1/4 - 1	1/2 - 1
	Fall webworm	1/2	1/2
Forests, Shade trees,	Armyworms	1 - 2	-
Ornamental plants,	Pine butterfly	1	1
Flowers	Spruce budworm	1 - 2	1 - 2
	Western spruce budworm	1	1
	Douglas fir tussock moth	1	1
	Diamondback moth	1/4 - 3/4	1
	Gypsy moth	1/2 - 2	1 - 2
	Elm spanworm	1/2 - 1	1/2 - 1
	Sagworm, Saddled prominent	1/2 - 1	1/2 - 1
	Saddleback caterpillar, Leafrollers	1/2 - 1	1/2 - 1
	Loopers, Western tussock moth	1/2 - 1	1/2 - 1
	Tobacco budworm/Bollworm/Corn earworm	1/2 - 1	1/2 - 1
	Io moth, Mimosa webworm	1/2 - 1	1/2 - 1
	Jack pine budworm	1/2 - 1	1/2 - 1
	Oleander moth	1/2 - 1	1/2 - 1
	Fall webworm	1/2	1/2
	Tent caterpillars	1/4 - 1	1/4 - 1
	Redhumped caterpillar	1/4 - 1	1/4 - 1
	Casebearers, Oakworms	1/4 - 1	1/4 - 1
	Hornworms	1/4 - 1	1/4 - 1

For best control of Gypsy moth, apply when young larvae are present and when leaf expansion is 40-50%. Repeat in 1 to 3 weeks.

For best control of spruce budworm, apply on populations below 35 larvae per 18-inch branch tip and when 50% of the larvae are in the 3rd and 4th instar

Citrus	Leafrollers, Hornworms, Loopers	1/2 - 1	1/2 - 1
Tropical fruits	Orangedog	1/4 - 1/2	1/4 - 3/4
Stored Products: grain legumes peanuts oilseeds and other seeds and grains	Indian meal moth	10 quarts/100 gallons (3.2 fluid oz/gallon)	
	Almond moth		
	Mediterranean flour moth		

Continuously agitate spray solution and spray at the rate of six pints per ten bushels to grain going into storage bins or bags on a conveyor or auger to obtain thorough mixing. Alternately the top 4-6 inches of grain in a bin may be treated during the bin filling process or after filling with one quart in ten gallons water per 500 square feet surface area and raked in