

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

Keep out of 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: Do not reuse empty container. 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 insect 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. Dilute sprays should not be allowed to stand for more than 12 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 application should use recommended rates in 1/2 to 10 gallons of water per acre during early morning or evening hours when winds are low. Spray systems which produce a 200-300 micron droplet size are preferable.

Small Quantity Use Rates

Recommended Rate	Teaspoonfuls per Gallon
1 pt/acre or 100 gals	1
1 qt/acre or 100 gals	2
2 qts/acre or 100 gals	4

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.

ACCEPTED

SEP 1 1981

Under the label
this product must be used
as directed for the
pesticide and under
EPA Reg. No. 43382-5

Product of France

APPLICATION

Crop
Field and Greenhouse
vegetables including:
Broccoli, Spinach, Corns,
Cauliflower, Kale, Lettuce,
Turnips, Turnip greens, Beets,
Cherry, Mustard greens, Beans,
Cabbage, Brussels Sprouts, Peas,
Chinese Cabbage, Sweet Potato,
Kohlrabi, Eggplant, Sweet Corn,
Tomatoes, Peppers, Eggplant,
Eggplant, Cucumber, Cucumber,
Melons, Squash.

Tobacco

Tobacco (tobacco moth) during
tobacco uniformly applied as a
wax and hours of storage after

Silfower, Sugar beets,
Mints, Peanuts, Alfalfa,
Soybeans, Sunflowers, Hay,
Pastures, Small grains,
Forage crops.

Turf
Rangeland

Grapes, Blueberries,
Blackberries, Currants,
Raspberries,
Strawberries,
Dewberries

Cotton

Apply at first sign of 1st and 2nd
with ground equipment or 2-5
reapply at 3-5 day intervals or
Bactospeine at 25 to 100 quart
ingredient (AI) acre to suppress

Crop	Pest
Peaches, Plums	Gypsy mo
Cherries, Walnuts	Walnut ca
Almonds, Pecans	Leafroller
Fibers	Cankerw
Apples, Pears	Tent cate
	Redhump
	Fall web
Forest, Shade trees	Armyworm
Ornamental plants	Pine bud
Flowers	Spruce b
	Western
	Douglas
	Diamond
	Gypsy m
	Elm span
	Bagworm
	Saddleb
	Loopers
	Tobacco
	to moth
	Jack pine
	Oleander
	Fall web
	Tent cate
	Redhump
	Cankerw
	Hornworm

For best control of Gypsy moth
Repeat in 1 to 3 weeks
Use against spruce budworm p

Crop	Pest
Citrus	Leafroller
Tropical fruits	Oranged
Stored Products:	Indian m
grain legumes	Almond
peanuts, oilseeds	Mediterr
and other seeds	
and grains	

Continuously agitate spray sol
storage bins or bags on a conv
granulation may be treated
water per 500 square feet surfa

BACTOSPEINE

FLOWABLE CONCENTRATE

Bacillus thuringiensis Berliner, var. *kurstaki*, primary powder fermentation
 100 million Units per milligram of product (equivalent to 35 billion Inter-
 ... 10%
 ... 90%
 ... 100%

OUT OF REACH OF CHILDREN CAUTION

CAUTIONARY STATEMENTS

Avoid inhalation or contact with eyes or open wounds.

ENVIRONMENTAL HAZARDS

Keep out of lakes, ponds, or streams.
 Clean water by cleaning of equipment or disposal of wastes.

STORAGE AND DISPOSAL

Containers of unused Bactospeine. Store in cool place. Activity may
 Storage at temperatures above 90°F. Protect from freezing
 Empty container. Perforate or crush and discard container according
 disposal regulations and in a safe place.

DIRECTIONS FOR USE

Use this product in a manner inconsistent with its labeling
 Flowable Concentrate provides best control when caterpillars are
 and most susceptible to the product which must be eaten. Good leaf
 effective insect control. Higher rates are generally necessary when
 is dense.
 Apply and thoroughly to adjacent soil when larvae are young
 Water, pour the recommended amount into a 1/2 filled tank and agitate
 until the mixing process is complete. Bactospeine is compatible with
 spreaders, and stickers except those that are highly alkaline in nature.
 and to stand for more than 12 hours.
 Amount of product may be applied by high pressure hydraulic
 per acre. Cover foliage thoroughly, but avoid runoff. Mist blower
 100 lbs of water per acre.
 Coverage and are recommended.
 For fruits, use recommended amount per 100 gallons water and apply 100
 per acre.
 Recommended rates in 1/2 to 10 gallons of water per acre during early
 and are low. Spray systems which produce a 200-300 micron droplet

Small Quantity Use Rates

Teaspoonfuls per Gallon

1
 2
 4

Agent, *Bacillus thuringiensis*, is exempt from tolerance requirements.
 the day of harvest and in storage.

Affect the use of Bactospeine. Consult State Agricultural Extension or
 specific recommendations related to local crop protection problems.
 warranty, express or implied, including the warranties of commercially
 for any particular purpose concerning this material, other than those

APPLICATION RATES FOR BACTOSPEINE® FC

Crop	Pest	Quarts/Acre
Field and Greenhouse vegetables including		
Broccoli, Spinach, Chard	Amyworms	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, Brussels Sprouts, Pea	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, Potatoes	Imported cabbageworm	1-4-3-4
Spinach, Carrots, Cucumbers	Green cloverworm	1-4-3-4
Beans, Squash	Hornworm	1-4-3-4
Tobacco	Tobacco budworm, Loopers, Hornworms	1-2-1 1-2-1 1-4-3-4

To control tobacco budworm during storage, use 1/2 ounce of Bactospeine per 100 lbs of tobacco. Apply as a spray mist to leaf surfaces before bundling or to opened bundles and to stalks and stems 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	Grapeleaf skeletonizer	1-3-1
Blackberries, Currants	Loopers, Salt marsh caterpillar	1-3-1
Raspberries	Grape leafroller/leafrollers	1-3-1
Strawberries	Hornworms	1-4-3-4
Lowberries		
Cotton	Loopers	1-3-1
	Tobacco budworm	1-4-1
	Bollworm	1-4-1

Apply at first sign of infestation. 1st and 2nd instar budworm or bollworm larvae. Use at least 7 gallons total spray
 with ground equipment or 2-4 gallons per acre with aerial equipment. To continue worm suppression
 reapply at 3-7 day intervals or use scouting report recommendations.

Bactospeine at 1/2 to 1 quart per acre may be tank mixed with methomyl at 225 to 675 lbs active
 ingredient. A tank mix suppress infestation of early instar larvae.

Crop	Pest	Quarts/100 Gallons (Ground Application)	Quarts/Acre (Air Application)
Pearl and Flints	Gypsy moth	1-2-1	1
Cherries, Walnuts	Walnut caterpillar	1-2-1	1-2-1
Almonds, Pecans	Leafrollers	1-2-1	1-2-1
Flints	Cankerworms	1-4-1	1-2-1
Apples, Pears	Tent caterpillars	1-4-1	1-2-1
	Redhumped caterpillar	1-4-1	1-2-1
	Fall webworm	1-2	1-2
Forests, Shade trees	Amyworms	1-2	1
Ornamental plants	Pine butterfly	1	1
Flowers	Spruce budworm	1	1
	Western spruce budworm	1	1
	Douglas fir tussock moth	1	1
	Diamondback moth	1-4-3-4	1
	Gypsy moth	1-2-1	1
	Elm spanworm	1-2-1	1-2-1
	Bagworm, Saddle 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
	Lo 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
	Cankerworms, 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.

Use against spruce budworm populations below 35 larvae per 18 inch branch tip.

Citrus	Leafrollers, Hornworms, Loopers	1-2-1	1-2-1
Tropical fruits	Orangedog	1-4-1-2	1-4-3-4
Stored Products	Indian meal moth	10 Quarts/100 gallons	
grains, legumes	Almond moth	1-2 fluid oz./Gallon	
peanuts, oilseeds	Mediterranean flour moth		
and other seeds			
and grains			

Control of stored products: Apply Bactospeine to spray at the rate of 1/2 to 1 quart per 100 lbs of grain going into
 storage bins. It kills on contact. Apply in a manner to obtain thorough mixing. Alternatively, the top 4-6 inches of
 grain in a bin may be treated during the bin filling process. After filling with one quart of Bactospeine per 100
 water per 500 square feet surface area and take 1-2.