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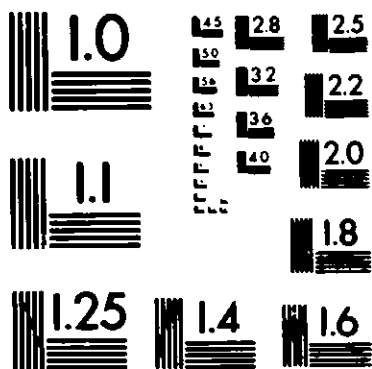
Film Identification

PIONEERS IN METHYLENE BLUE TESTING SINCE 1974

**MicroD**  
INTERNATIONAL

1500 COUNTRY ROAD 5, BIRMINGHAM, MN 55337 USA  
TEL: 612 435 7887 FAX: 612 435 7887 T.L.X. 510800000

PRECISION<sup>SM</sup> RESOLUTION TARGETS



150 MM

6"

PM-3 8½"x11" PHOTOGRAPHIC GENERAL TARGET  
NBS 1010a ANSI/ISO #2 EQUIVALENT

BACTOSPEINE XLV 23 draft label text

4393A page 1  
3/OCT/88

USE OF THIS LABEL  
FOR SALE AND DISTRIBUTION  
IS LIMITED TO THE  
EPA REGISTERED PRODUCT  
37100-39®

# bactospeine

## XLV 23

## BIOLOGICAL INSECTICIDE

ACTIVE INGREDIENT: Bacillus thuringiensis Berliner, var. kurstaki,  
fermentation solids\*: . . . . . 28.75%  
INERT INGREDIENTS : . . . . . 71.25%  
100%

BACTOSPEINE XLV 23 contains 23 000 International Units per milligram which is equivalent to 101 billion International Units per gallon of product.

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CAUTION: KEEP OUT OF REACH OF CHILDREN

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### PRECAUTIONARY STATEMENTS

Hazards to Humans: Avoid inhalation  
or contact with eyes or open wounds.

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### STORAGE AND DISPOSAL

**Storage:** Tightly reclose containers of unused BACTOSPEINE XLV 23. Store in a cool place, frost-free and out of direct sunlight. Activity may be impaired by storage at temperatures above 90°F.

**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 labelling.

BACTOSPEINE XLV 23 (Bacillus thuringiensis) is most effective on caterpillars in the first or second larval stages when they are actively feeding, as the product must be ingested to kill. Good leaf coverage is essential to achieve effective insect control. Higher rates are generally necessary when infestations are heavy and foliage is dense.

**GROUND APPLICATION**

BACTOSPEINE XLV 23 may be applied undiluted or diluted with water, depending on the application equipment used. Dilution with water is usually necessary for field crops as thorough coverage is essential. In this case, pour the recommended amount into a half-filled tank and agitate. Fill tank and maintain agitation until the mixing process is complete.

BACTOSPEINE XLV 23 is compatible with various insecticides, 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, 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**

BACTOSPEINE XLV 23 may be applied undiluted or diluted with water, depending on the application equipment used. If dilution is required, pour the recommended amount into a half-filled tank and agitate. Fill tank and maintain agitation until the mixing process is complete. Use recommended rates in up 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 application by turbine-powered helicopters, the spraying booms must be fixed in such a way that the spraying mist will not enter the turbine inlet continuously.

For small quantities, use 0.75 teaspoonfuls per gallon of water to provide an application rate of 11 fluid oz./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.

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**NOTICE:** Local conditions may affect the use of BACTOSPEINE XLV 23. Consult State Agricultural Extension or Experiment Station Specialists for specific recommendations related to local crop protection problems. Duphar B.V. 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.

## APPLICATION RATES FOR BACTOSPEINE XLV 23

Crop	Pest	Fluid Oz./Acre
<b>Field and Greenhouse vegetables, including:</b>		
Broccoli, Collards,	Armyworms	11-21
Cauliflower, Kale, Lettuce,	Tomato fruitworm/Corn earworm/ Bollworm	11 (every 5-7 days)
Turnips, Turnip greens, Beets,	Variegated cutworm	11
Celery, Mustard greens, Beans,	Salt marsh caterpillar	3-11
Cabbage, Brussel Sprouts, Peas,	Mimosa webworm	3-11
Chinese Cabbage, Sweet Potato,	Tobacco budworm	3-11
Kohlrabi, Endive, Sweet Corn,	Loopers, Melonworm, Pickleworm	3-11
Tomatoes, Peppers, Eggplant,	Diamondback moth	3- 8
Escarole, Lentils, Potato,	Imported cabbageworm	3- 8
Spinach, Carrots, Cucumbers,	Green cloverworm, Hornworm	3- 8
Melons, Squash		
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Tobacco	Tobacco budworm, Loopers	5-11
	Hornworms	3- 8
 To control tobacco moth during storage use 1 fluid oz or 2 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.		
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Safflower, Sugar beets,	Tobacco budworm/bollworm	3-11
Mints, Peanuts, Alfalfa,	Loopers,	3-11
Soybeans, Sunflower, Hay,	Salt marsh caterpillar	3-11
Pastures, Small grains,	Velvetbean caterpillar	3-11
Forage crops	Green cloverworm,	3-11
	Skippers	3- 5
	Alfalfa caterpillar	2- 3

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Turf,	Sod webworm	21-43
Rangeland	Rangeland caterpillar	2- 3

Grapes, Blueberries,	Grapeleaf skeletonizer	4-11
Blackberries, Currants,	Loopers, Salt marsh caterpillar,	4-11
Raspberries, Hops,	Grape leaffolder/leafrollers	4-11
Strawberries,	Hornworms	2- 8
Dewberries		

Cotton	Loopers	4-11
	Tobacco budworm, Boll budworm	3-11

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 days intervals or use scouting report recommendations. BACTOSPEINE XLV 23 at 3-11 fluid oz./acre may be tank mixed with methomyl at 0.225 to 0.675 lbs. active ingredient (AI)/acre to suppress infestations of early instar larvae.

Crop	Pest	Fluid Oz./100 Gallons Ground Applica- tion	Fluid Oz./Acre Aerial Appli- cation
Peaches, Plums,	Gypsy moth	5-21	11-21
Cherries, Walnuts,	Walnut caterpillar, Loopers	5-11	5-11
Almonds, Pecans,	Leafrollers, Green fruitworm	5-11	5-11
Filberts,	Cankerworms	2- 8	5-11
Apples, Pears,	Tent caterpillars	2- 8	5-11
Avocados	Redhumped caterpillar	2- 8	5-11
	Fall webworm	5	5

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Forests, Shade	Armyworms	11	11-21
trees, Ornamental	Pine butterfly	11	11
plants, Flowers	Spruce budworm	11-21	11-21
	Western spruce budworm	11-21	11-21
	Douglas fir tussock moth	11-21	11-21
	Diamondback moth	3- 8	11
	Gypsy moth	5-21	11-21
	Elm spanworm	5-11	5-11
	Bagworm, Saddled prominent	5-11	5-11
	Saddleback caterpillar,	5-11	5-11
	Leafrollers		
	Loopers, Western tussock moth	5-11	5-11
	Tobacco budworm/Bollworm/		
	Corn earworm	5-11	5-11
	Io moth, Mimosa webworm	5-11	5-11
	Jack pine budworm	5-11	5-11
	Oleander moth	5-11	5-11
	Fall webworm	5	5
	Tent caterpillars	3-11	3-11
	Redhumped caterpillar	3-11	3-11
	Cankerworms, Oakworms	3-11	3-11
	Hornworms	3-11	3-11

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 bracht tip and when 50% of the larvae are in the 3rd and 4th instar.

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Citrus,	Leafrollers, Hornworms, Loopers	5-11	5-11
Tropical fruits	Orangedog	3- 5	3- 8

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Stored Products:	Indian meal moth	3.3 quarts/100 gallons
grain legumes,	Almond moth	(1.0 fluid oz/galllon)
peanuts, oilseeds,	Mediterranean flour moth	
and other seeds		
and grains		

Continuously agitate spray solution and spray at the rate of three 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 five gallons water per 500 square feet surface area and raked in.

EPA Reg. No. 37100-39  
EPA Est. No. 37100-HL-01  
Net Contents:

Lot No.

Net Weight:

607

283881/300  
17/4

SEP 19 1990

283882/300  
17/5

283883/345  
17/6

Duphar P.V.  
Crop Protection Division  
c/o John W. Kennedy Consultants, Inc.  
9101 Cherry Lane, Suite 113  
Laurel, MD 20708-1133

Gentlemen:

Subject: Bactospeine XLV 23 (Formerly Putura)  
EPA Registration No. 37100-39  
Your Submission Dated October 18, 1988

The amendment referred to above, submitted in connection with registration under section 3(c)(7)(A) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), is acceptable provided that you:

1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data.
2. Submit five (5) copies of your final printed labeling before you release the product for shipment.

52385; I:CR-43; Nelson; C. Disk; KENCO; 8/10/90; EK; VO; EK

CONCURRENCES

SYMBOL							
SURNAME							
DATE							

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely yours,



Phil Hutton  
Product Manager (17)  
Insecticide-Rodenticide Branch  
Registration Division (H7505C)

Enclosure