

XenTari
BIOLOGICAL INSECTICIDE

WATER DISPERSIBLE GRANULE
BIOLOGICAL INSECTICIDE

Active Ingredient:

<u>Bacillus thuringiensis</u> , subsp. <u>aizawai</u>	
Lepidopteran active toxin(s)	10.3%w/w
Inert Ingredients:.....	89.7%w/w
Total:.....	100.0%w/w

Potency: 35,000 Diamondback Moth Units per mg of product
or 15.9 billion Diamondback Moth Units per pound
of product.

Potency units should not be used to adjust use
rates beyond those specified in the Directions
For Use section.

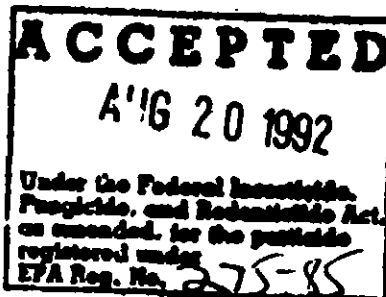
KEEP OUT OF REACH OF CHILDREN

C A U T I O N

EPA Registration No. 275-85
EPA Est. No. 33762-IA-1
Patent Pending

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS

Harmful if swallowed, inhaled, or absorbed through the skin.
May cause eye irritation. Avoid breathing dust or spray
mist. Avoid contact with skin, eyes, or clothing. Wash
thoroughly with soap and water after handling. Remove
contaminated clothing and wash before reuse. Do not apply
this product in such a manner as to directly or through drift
expose workers or other persons. The area being treated must
be vacated by unprotected persons. Mixers, loaders, and
applicators must wear a dust mask when handling this product.



Environmental Hazards

This product is toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

The toxicity of this product to the predatory wasp Trichogramma pretiosum is not known.

This product is toxic to the green lacewing and the predatory mite Metaseiulus occidentalis.

This product is highly toxic to honey bees exposed to direct treatment. Do not apply this product while bees are actively visiting the treatment area.

RE-ENTRY STATEMENT

Do not enter treated areas without protective clothing until spray have dried. Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information. Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. Oral warnings should at a minimum include that 1) areas being treated must be vacated by unprotected persons, 2) workers must not enter treated areas without protective clothing until sprays have dried, and 3) in case of contact with eyes or skin, those exposed should immediately flush eyes or skin with plenty of water and seek medical attention if irritation persists. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood. Written warnings must include the following information: "CAUTION. Area treated with XenTari on (date of application). Do not enter without protective clothing until sprays have dried. If in eyes or on skin - Flush eyes or skin with plenty of water. Get medical attention if irritation persists."

STATEMENT OF PRACTICAL TREATMENT

In case of contact with eyes or skin, immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Storage: Reclose containers of unused XenTari. Store in a dry place inaccessible to children and out of sunlight.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal:

Plastic Bottle: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Metal can: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

DIRECTIONS FOR USE

Do not apply this product through any type of irrigation system.

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

Days to Harvest: There are no restrictions on applying XenTari up to the time of harvest. Individual state regulations may vary and should be consulted for allowable pre-harvest application intervals.

Sites: XenTari may be used for any labeled pest in both field and greenhouse use.

XenTari is an insecticide for use against listed caterpillars (larvae) of lepidopterous insects. Close scouting and early attention to infestations is highly recommended. Larvae must eat deposits of XenTari to be affected. Always follow these directions:

- Treat when larvae are young (early instars) before the crop is damaged.
- Larvae must be actively feeding on treated, exposed plant surfaces.
- Thorough spray coverage is needed to provide a uniform deposit of XenTari at the site of larval feeding. Use overhead and drop nozzles to obtain good spray coverage on both sides of foliage. Use sufficient spray volume to insure uniform deposition on all plant surfaces.

- Under heavy pest population pressure, use the higher label rates, shorten the spray interval, and/or raise spray volume to improve spray coverage.
- Repeat applications at an interval sufficient to maintain control, usually 3 to 14 days depending on plant growth rate, moth activity, rainfall after treating, and other factors. If attempting to control a pest with a single spray, make the treatment when egg hatch is essentially complete, but before crop damage occurs.
- A spreader-sticker which has been approved for use on growing and harvested crops should be added for hard-to-wet crops such as cabbage, or to improve weather-fastness of the spray deposits.
- XenTari is a non-restricted use pesticide and does not require a restricted use permit for purchase and use.
- XenTari may be tank mixed with other labeled insecticides to enhance control. Use of the resulting tank mix must be in accordance with the more restrictive label limitations and precautions. No dosage rates should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing. Before tank mixing XenTari with other labeled products, including spreader stickers, check for tank mix compatibility.

After ingesting a lethal dose of XenTari, larvae stop feeding within the hour, and will die within several hours to 3 days. Mortality varies with larval size (instar), lepidopteran species, and dose consumed. Following ingestion, larvae become sluggish, discolored, then shrivel, blacken and die. Smaller larvae die more quickly.

XenTari may be applied in conventional ground or aerial equipment with quantities of water sufficient to provide uniform coverage of infested plant parts. The volume of water needed per acre will depend on crop development, relative humidity, spray equipment, and local experience. Usually, selection of moderate to high spray volume will provide the best results in most equipment. For optimal results, use at least 3 gallons of water per acre by air; except in arid areas, where 5 to 10 gallons are required. Add water to the mix tank and provide moderate agitation. With agitating, add the required amount of XenTari. Continue agitation, and add other spray materials, if any. Add remaining water, if any, and agitate until fully mixed. Maintain the suspension with moderate agitation while loading and spraying. Do not mix more XenTari than can be used in a 3 day period.

DIRECTIONS FOR USE (Continued)

For Smaller Spray Volumes:

If Rate is

Use This Amount
Per Gallon (wt)

1/4 lb./acre or 100 gals.
1/2 lb./acre or 100 gals.
1 lb./acre or 100 gals.
2 lb./acre or 100 gals.

1/2 tsp. (0.04 oz)
1 tsp. (0.08 oz)
2 tsps. (0.16 oz)
4 tsps. (0.32 oz)

APPLICATION RATE

Crop Group (Miscellaneous)	Pests	Pounds/Acre
Alfalfa (Hay and Seed), Hay and Other Forage Crops	Loopers	1/2 - 1
	*Alfalfa Caterpillar	1/2 - 1
	*European Skipper (Essex Skipper)	1/2 - 1
	Armyworms	1/2 - 2
Berries and Small Fruit such as Grapes, Strawberries, and Blackberries	Grapeleaf Skeletonizer (ground only)	1/2 - 1
	*Grape Leafroller	1/2 - 1
	*Achema Sphinx Moth (Hornworm)	1/2 - 1
	*Saltmarsh Caterpillar (ground only)	1/2 - 1
	*Omnivorous Leafroller (ground only)	1/2 - 1
	Loopers	1/2 - 1
	*Orange Tortrix	1/2 - 1
	*Oblique Banded *Leafroller	1/2 - 1
	Armyworms	1/2 - 2
	Tobacco Budworm	1/2 - 2
	Grape Berry Moth	1/2 - 1
	*Melonworms	1/2 - 1
	*Cutworms	1/2 - 1
	Bulb such as Garlic and Onions (green and bulb)	Loopers
*Omnivorous Leafroller		1/2 - 1
*Hornworms		1/4 - 1
Imported Cabbageworm		1/4 - 1
Diamondback Moth ¹		1/4 - 1
*Green Cloverworm		1/2 - 1
Webworm		1/2 - 1
*Saltmarsh Caterpillar		1/2 - 1
Armyworms		1/2 - 2
*Cutworms		1/2 - 1
Cross-striped Cabbage- worm		1/2 - 1
Heliothis	1/2 - 2	
Cucurbit Vegetables such as Melons, Cucumbers and Squash	Loopers	1/2 - 1
	*Melonworms	1/2 - 1
	*Rindworm complex	1/2 - 1
	Armyworms	1/2 - 2

APPLICATION RATE (Continued)

Crop Group (Miscellaneous)	Pests	Pounds/Acre
Flowers, Bedding Plants and Ornamentals (Ground application only)	Loopers	1/4 - 1
	Tobacco Budworm	1/4 - 1
	*Omnivorous Looper	1/4 - 1
	*Omnivorous Leafroller	1/4 - 1
	Diamondback Moth ¹	1/4 - 1
	Armyworms	1/2 - 2
	*Ello Moth (Hornworm)	1/4 - 1
	*Io Moth	1/4 - 1
	*Oleander Moth	1/4 - 1
	*Azalea Caterpillar	1/4 - 1
Fruiting Vegetables such as Tomatoes, Peppers and Eggplant	Loopers	1/2 - 1
	Hornworm	1/4 - 1
	Tomato Fruitworm	1/2 - 1
	*Variegated Cutworm	1/2 - 1
	*Saltmarsh Caterpillar	1/2 - 1
	Armyworms	1/2 - 2
Greenhouse/Shadehouse and Outdoor Nursery Crops such as Leafy, Herbs, Brassica and Fruiting groups	Loopers	1/2 - 1
	Heliothis	1/2 - 2
Herbs, Spices and Mints such as Basil, Chives, Dill, Leeks and Peppermint	Looper	1/2 - 1
	*Saltmarsh Caterpillar	1/2 - 1
	Armyworms	1/2 - 2
Leafy and Cole Crops such as Lettuce (head and leaf), Kale, Celery, Spinach, Broccoli, Cabbage, Mustard Greens, Brussel Sprouts, Cauliflower, Collards, Chinese Cabbage, Endive Kohlrabi and Parsley	Loopers	1/2 - 1
	*Omnivorous Leafroller	1/2 - 1
	*Hornworms	1/4 - 1
	Imported Cabbageworm	1/4 - 1
	Diamondback Moth ¹	1/4 - 1
	*Green Cloverworm	1/2 - 1
	Webworm	1/2 - 1
	*Saltmarsh Caterpillar	1/2 - 1
	Armyworms	1/2 - 2
	*Cutworms	1/2 - 1
	Cross-striped Cabbage-worm	1/2 - 1
Heliothis	1/2 - 2	
Legume Vegetables such as Beans, Peas, Lentils and Soybeans.	Loopers	1/2 - 1
	Soybean Looper	1/2 - 1
	*Green Cloverworm	1/4 - 1
	*Velvetbean Caterpillar	1/4 - 1
	Armyworms	1/2 - 2
	*Podworms	1/2 - 1

APPLICATION RATE (Continued)

Crop Group (Miscellaneous)	Pests	Pounds/Acre
Root and Tuber such as Carrots, Potatoes, Beets and Sugarbeets	Loopers	1/2 - 1
	*Omnivorous Leafroller	1/2 - 1
	*Hornworms	1/4 - 1
	Imported Cabbageworm	1/4 - 1
	Diamondback Moth¹	1/4 - 1
	*Green Cloverworm	1/2 - 1
	Webworm	1/2 - 1
	*Saltmarsh Caterpillar	1/2 - 1
	Armyworms	1/2 - 2
	*Cutworms	1/2 - 1
	Cross-striped Cabbage- worm	1/2 - 1
	Heliothis	1/2 - 2
	Stone Fruit such as Cherries, Plum, Peach, Prune and Nectarine Pome Fruit such as Apples and Pears Tree Nuts such as Almonds, Pecan, Walnut and Filbert Pomegranates	*Redhumped Caterpillar
*Tent Caterpillars		1/2 - 2
*Omnivorous Leafroller		1/2 - 2
*Fall Webworm		1/2 - 2
*Walnut Caterpillar		1/2 - 2
*Cankerworms		1/2 - 2
*Gypsy Moth		1/2 - 2
*Variegated Leafroller		1/2 - 2
*Redbanded Leafroller		1/2 - 2
*Tufted Apple Budmoth		1/2 - 2
*Fruittree Leafroller		1/2 - 2
*Oriental Fruit Moth		1/2 - 2
*Cutworms		1/2 - 2
*Filbert Leafroller		1/2 - 2
*Obliquebanded Leaf- roller		1/2 - 2
*Codling Moth		1/2 - 2
Armyworms	1/2 - 2	
*Twig Borer	1/2 - 2	
Small Grains (Ground application only)	Loopers	1/2 - 1
	Armyworms¹	1/2 - 2
Tropical Fruits	*Hornworm	1/2 - 2
	*Leafrollers	1/2 - 2
	*Omnivorous Looper	1/2 - 2
	Loopers	1/2 - 2

* For all states except California.

¹ For best results, use a ground applicator, a minimum of 50 gallons total mix per acre, 50-100 psi and 3-7 nozzels per bed.

APPLICATION RATE

OTHER CROPS:	Pests	Pounds/Acre
Asparagus	Armyworms¹	1/2 - 2
Avocado	*Amorbia Moth	1/2 - 2
	*Omnivorous Leafroller	1/2 - 2
	*Omnivorous Looper	1/2 - 2
	*Orange Tortrix	1/2 - 2
	*Spanworm	1/2 - 2
Bananas	*Banana Skipper	1/2 - 1
Citrus	*Fruittree Leafroller	1/2 - 2
	*Orangedog	1/4 - 1
	*Citrus Cutworm³	1/2 - 2
Corn (Sweet and Field and Sorghum)	Armyworms¹	1/2 - 2
	*Headworms	1/2 - 1
	European Corn Borer	1/2 - 2
Cotton	*Tobacco Budworm²	1/2 - 2
	*Cotton Bollworm²	1/2 - 2
	Loopers	1/2 - 1
	*Saltmarsh Caterpillar	1/2 - 1
	Armyworms¹	1/2 - 2
Cups	Loopers	1/2 - 1
	Armyworms¹	1/2 - 2
Kiwi Fruit	*Omnivorous Leafroller	1/2 - 2
Malanga	*Saltmarsh Caterpillar	1/2 - 1
	Armyworms¹	1/2 - 2
Peanuts	Loopers	1/2 - 1
	*Velvetbean Caterpillar	1/2 - 1
	*Green Cloverworm	1/4 - 1
	*Podworms¹	1/2 - 1
Pineapple	*Gummosos-Batrachedra comosae (Hodges)	1/4 - 1/2
	*Thecla-Thecla basilides (Geyr)	1/4 - 1/2

APPLICATION RATE (Continued)

OTHER CROPS	Pests	Pounds/Acre
Rape	Looper	1/2 - 1
	Armyworms ¹	1/2 - 2
	Heliothis	1/2 - 2
Safflower	Loopers	1/2 - 1
	*Saltmarsh Caterpillar	1/2 - 1
	Armyworms ¹	1/2 - 2
Sunflowers (Ground application only)	Loopers	1/2 - 1
	*Head Moth	1/2 - 1
Tobacco	Tobacco Budworm	1/2 - 1
	*Hornworms	1/4 - 1
	Loopers	1/2 - 1
Turf	Sod Webworm	1 - 2

* For all states except California.

¹Xentari may be used to control small armyworms and/or podworms (1st and 2nd instar) when populations are light and full coverage sprays are applied. Repeat treatment as necessary. If mature worms or heavy populations are present a contact insecticide should be used to enhance control.

²Use to control light to moderate populations of newly hatched worms in integrated pest management conditions. Repeat treatments at 4 to 5-day intervals as long as necessary and results are acceptable. Use in combination with ovicidal rates of labeled Heliothis ovicides.

³Apply to light to moderate populations of newly-hatched worms.

APPLICATION RATE

XenTari for Trees and Forests⁴ (For all states except California)

<u>Crop</u>	<u>Pest</u>	<u>lbs/100 gallons</u> ⁵
Forest, Shade, Sugar Maple Trees and Ornamentals (Ground application only)	Gypsy Moth	1/4 - 1
	Bagworm	1/4 - 1
	Redhumped Caterpillar	1/4 - 1
	Spring & Fall Cankerworm	1/4 - 1
	Fall Webworm	1/4 - 1
	Elm Spanworm	1/4 - 1
	Tent Caterpillars	1/4 - 1
	California Oakworm	1/4 - 1
	Pine Butterfly	1/4 - 1
	Spruce Budworms	1/4 - 1
	Saddle Prominent Caterpillar	1/4 - 1
	Douglas Fir Tussock Moth	1/4 - 1
	Western Tussock Moth	1/4 - 1
	Fruittree Leafroller	1/4 - 1
	Blackheaded Budworm	1/4 - 1
	Mimosa Webworm	1/4 - 1
	Jack Pine Budworm	1/4 - 1
Saddleback Caterpillar	1/4 - 1	
Greenstriped Mapleworm	1/4 - 1	
Hemlock Looper	1/4 - 1	

⁴ Forest, Shade, Sugar Maple Trees and Ornamentals.

⁵ Rate for hydraulic sprayer. For mist blowers, mix the applicable amount (lb gallons of water.

Note: Inclusion of a suitable spreader-sticker approved for forest insect control is recommended to improve coverage, rain fastness and/or resist wash-off.

Pest

Rate

Indian Meal Moth⁶
Almond Moth⁶

3/8 lb. 100 bu (undiluted
and diluted)*

*As a surface treatment, apply 1/2 lb. Xentari in 5-10 gal. of water per 500 sq. ft of grain surface area, mix into top 4 inches. For commodities coarser than shelled corn, increase depth of treatment according to the habit of the pest.

⁶For the control and prevention of these pests, apply Xentari in a constantly agitated water suspension to the top four inch surface layer of grain in the bin. Use a sprinkler can or sprayer to apply the suspension into the grain stream as the last (top) four inch layer is augered into the bin. Mix 1/20 l. Xentari per gallon of water. Apply 0.6 pint of this mixture per bushel as grain is augered into storage. Or, sprinkle the suspension onto the surface of the grain in the bin and mix thoroughly with a scoop or rake to the depth of four inches. More thorough coverage may be achieved by dividing the recommended concentration into three applications and mixing the grain between applications.

For the protection of bagged grain including popcorn, apply the suspension to the entire grain mass and mix thoroughly prior to bagging.

Treatments can be applied to stored grain at any time, but for best results, make application immediately after harvest before moth activity occurs. In areas where late fall harvested grain is not subject to infestation because of low temperatures, application can be delayed until late winter or early spring before moth activity begins. Control for a full storage season should normally be expected; however, repeat application if infestation recurs.

APPLICATION RATE (Continued)

XenTari FOR STORED AGRICULTURAL COMMODITIES (Continued) (For all states except California)

GRAINS, SOYBEANS, SUNFLOWER SEED, CROP SEED, CONDIMENTAL SEEDS, SPICES, HERBS, BIRDSEED and POPCORN. (Continued)

This treatment controls the moth larvae. If an infestation is present when the grain is treated, moth emergence may continue for several days. If immediate control of severe infestations is desired, grain should be fumigated prior to application of this treatment. XenTari will not control weevils or other beetles.

PEANUTS (For all states except California)

<u>Pest</u>	<u>Rate</u>
Indian Meal Moth, Almond Moth	1/4 lb./ton*

*Apply this rate to the top four to eight feet of nuts when filling the warehouse.

To prevent and control these pests, spray an even coating of XenTari on the farmer stock peanuts while filling the warehouse. To make the spray solution, mix 3-3/4 lbs. XenTari per 5 gallons of water. Apply to 15 tons of commodity. Do not pre-mix more spray solution than will be used within 12 hours. Keep the spray suspension agitated during application, and use pressures and nozzles sufficient to handle this suspension.

Before filling the warehouse, clean thoroughly, then spray interior of the facility with a XenTari suspension at the rate of 1/2 lb. XenTari per 100 gallons water. Spray enough suspension to wet all cracks and crevices.

For bagged peanuts, treat the entire quantity at the rate indicated above.

APPLICATION RATE

XenTari FOR STORED AGRICULTURAL COMMODITIES (Continued)

FLUE-CURED TOBACCO (For all states except California)

<u>Pest</u>	<u>Rate</u>
Tobacco Moth	0.2 oz./100 lbs*

*Apply 0.2 ounce (approximately 2 1/2 tsps.) of XenTari in one quart of water per 100 pounds of tobacco as a fine mist spray. Avoid overwetting. Tobacco should have just enough moisture to be handled without shattering at the time of application.

Tobacco to be Stored up to Twelve Months.

Spray loose leaves as the tobacco is being bundled from the curing barn. For tobacco on sticks, treat both sides of leaves.

Stored Tobacco.

For tobacco which is to be carried over, rebundle or restack sticks, fluff up tobacco and spray loose leaves.

For tobacco that has been stored over three weeks, apply at first signs of infestation; promptly open bundles, spray loose leaves, then bundle.

Treatment of Storage Barns.

If tobacco has been treated, or is going to be treated, treatment of the floors and walls may be made to aid in control. Sweep out the area, especially cracks and corners, and all of the loose tobacco pieces in which the moth might breed. Make a spray mixture containing 1/2 oz. (6 tsps.) XenTari per 2 1/2 gallons of water. Apply this at a rate of 1/2 gallon per 1000 sq. ft. of surface area. Be sure to spray into cracks and between floorboards.

NOTICE TO USER

Seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning the use of this product other than as indicated on the label. User assumes all risks of use, storage or handling not in strict accordance with accompanying directions.

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