

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JAN 14 1998

Mr. Marvin H. Alphin
Program Manager
Abbott Laboratories
Chemical and Agricultural Products Division
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North Chicago, IL 60064-4000

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345 / 5542930
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Dear Mr. Alphin:

Subject: XenTari Biological Insecticide Dry Flowable
Amendment to Remove Expiration Date and Update
Confidential Statement of Formula and Label
EPA Registration No. 275-104

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable subject to the following comments.

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data.

2. Make the following label changes:

- Place the phrase "(Ground Application Only)" in the application rate table blocks for cereal grains.
- On page 15 of the master label change the footnote numbering from 5 and 6 to 6 and 7 since a different footnote 5 appears on page 14. Also change the footnote numbering on page 16 from 6 to 8.

CONCURRENCES							
SYMBOL	7511W	7511W					
SURNAME	Monahan	Monahan	KNOX				
DATE	1/13/98	1/13/98	1/14/98				

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3. Submit five(5) copies of the revised final printed label for the record.

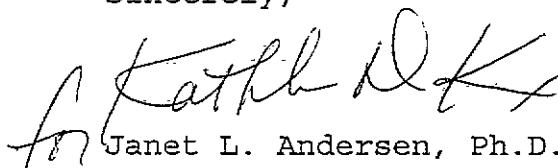
4. The 1/6/98 basic CSF is now the only acceptable formulation for this product.

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

We note that the expiration date for this registration has been removed and that the original conditions of registration have been satisfied.

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

Sincerely,



Janet L. Andersen, Ph.D.
Director
Biopesticides and Pollution
Prevention Division (7511W)

CONCURRENCES

SYMBOL								
SURNAME								
DATE								

XenTari

BIOLOGICAL INSECTICIDE
DRY FLOWABLE

Active Ingredient:

Bacillus thuringiensis, subsp. aizawai
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

CAUTION

EPA Registration No. 275-104
EPA Est. No. 33762-IA-1

Patent Pending

ACCEPTED
with COMMENTS
In EPA Letter Dated
JAN 14 1998
Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
275-104

STATEMENT OF PRACTICAL TREATMENT

IF IN EYES: Flush eyes with plenty of water. Call a physician if irritation persists.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention if irritation persists.

IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS (AND DOMESTIC ANIMALS)
CAUTION**

Harmful if inhaled, or absorbed through the skin. Causes moderate eye irritation. Avoid breathing dust or spray mist. Avoid contact with skin, eyes, or clothing.

PERSONAL PROTECTIVE EQUIPMENT

WPS USES: For those uses covered by the Worker Protection Standard (40 CFR Part 170) - in general, agricultural plant uses are covered - handlers who may be exposed to the dilute through application or other tasks must wear: long sleeved shirt and long pants, waterproof gloves, shoes plus socks and dust/mist filtering respirator (MSHA/NIOSH approval number prefix TX-21C).

In addition, handlers who may be exposed to the concentrate through mixing, loading, application or other tasks must wear: long sleeved shirt and long pants, waterproof gloves, shoes plus socks and dust/mist filtering respirator (MSHA/NIOSH approval number prefix TX-21C).

NON-WPS USES: For those uses NOT covered by the Worker Protection Standard 40 CFR Part 170 - in general, agricultural plant uses are covered - mixers, loaders, and applicators must wear a dust mask when handling this product.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

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.

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.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is: coveralls, waterproof gloves and shoes plus socks.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Keep unprotected persons out of treated areas until sprays have dried.

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.

Plastic Bag: Completely empty bag into application equipment then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

DIRECTIONS FOR USE

See Chemigation Section for Chemigation use directions.

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 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, discolor, 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 2 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.

For Smaller Spray Volumes:

<u>If Rate is</u>	<u>Use This Amount</u> <u>Per Gallon (wt)</u>
1/4 lb./acre or 100 gals.	1/2 tsp. (0.04 oz)
1/2 lb./acre or 100 gals.	1 tsp. (0.08 oz)
1 lb./acre or 100 gals.	2 tsps. (0.16 oz)
2 lb./acre or 100 gals.	4 tsps. (0.32 oz)

CHEMIGATION USE DIRECTIONS

Refer to these label sections under **General Instructions** for application rate information when chemigation is used.

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation systems. Do not connect an irrigation system (including greenhouse systems) used for pesticide applications to a public water system.

Spray Preparation

First prepare a suspension of XenTari in a mix tank. Fill tank with 1/2 to 3/4 the desired amount of water. Start mechanical or hydraulic agitation. Add the required amount of XenTari, and then the remaining volume of water. Then set the sprinkler to deliver a minimum of 0.1 to 0.3 inch of water per acre. Start sprinkler and uniformly inject the suspension of XenTari into the irrigation water line so as to deliver the desired rate per acre. The suspension of XenTari should be injected with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing. Any questions on calibration should be directed to your State Extension Service Specialists, to equipment manufacturers or other experts.

NOTE: When treatment with XenTari has been completed, further field irrigation over the treated area should be avoided for 24 to 48 hours to prevent washing the material off the crop.

General Precautions for Applications Through Sprinkler Irrigation Systems

Maintain continuous agitation in the mix tank during the mixing and application to insure a uniform suspension.

Greater accuracy in calibration and distribution will be achieved by injecting a larger volume for a more dilute solution per unit time.

Crop injury, lack of effectiveness, or illegal residues in the crop can result from nonuniform distribution of treated water. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise. Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation is either automatically or manually shut down

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment.

Do not apply when wind speed favors drift, when system connections or fittings leak, when nozzles do not provide uniform distribution or when lines containing the product must be dismantled and drained.

GENERAL INSTRUCTIONS/APPLICATION RATE

Crop Group (Miscellaneous)	Pests	Pound/Acre
Alfalfa (Hay and Seed), Hay and Other Forage Crops	Loopers	1/4 - 1 1/2
	Alfalfa Caterpillar	1/4 - 1 1/2
	European Skipper (Essex Skipper)	1/4 - 1 1/2
	Armyworms ¹	1/4 - 3
Berries and Small Fruit such as Grapes, Strawberries, and Blackberries, Cranberries, Raspberries and Blueberries	Grapeleaf Skeletonizer	1/4 - 1 1/2
	Grape Leafroller	1/4 - 1 1/2
	Achema Sphinx Moth (Hornworm)	1/4 - 1 1/2
	Saltmarsh Caterpillar	1/4 - 1 1/2
	Omnivorous Leafroller	1/4 - 1 1/2
	Loopers	1/4 - 1 1/2
	Orange Tortrix	1/4 - 1 1/2
	Oblique Banded Leafroller	1/4 - 1 1/2
	Armyworms ¹	1/4 - 3
	Tobacco Budworm	1/4 - 2
	Grape Berry Moth	1/4 - 2
	Melonworms	1/4 - 1 1/2
	Cutworm	1/4 - 1 1/2
	Spanworm	1/4 - 1 1/2
Bulb such as Garlic and Onions (green and bulb)	Loopers	1/4 - 1 1/2
	Omnivorous Leafroller	1/4 - 1 1/2
	Hornworms	1/4 - 1 1/2
	Imported Cabbageworm	1/4 - 1 1/2
	Diamondback Moth ⁴	1/4 - 1 1/2
	Green Cloverworm	1/4 - 1 1/2
	Webworm	1/4 - 1 1/2
	Saltmarsh Caterpillar	1/4 - 1 1/2
	Armyworms ¹	1/4 - 3
	Cutworms	1/2 - 1 1/2
	Cross-striped Cabbageworm	1/4 - 1 1/2
	<i>Heliothis</i>	1/4 - 2

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APPLICATION RATE (Continued)

Crop Group (Miscellaneous)	Pest	Pounds/Acre
Curcubit Vegetables such as Melons, Cucumbers and Squash	Loopers	1/4 - 1
	Melonworms	1/4 - 1
	Rindworm complex	1/4 - 1
	Armyworms ¹	1/4 - 3
	Cutworms	1/4 - 2
Flowers, Bedding Plants and Ornamentals (Ground application only)	Loopers	1/4 - 1 1/2
	Tobacco Budworm	1/4 - 1 1/2
	Omnivorous Looper	1/4 - 1 1/2
	Omnivorous Leafroller	1/4 - 1 1/2
	Diamondback Moth ²	1/4 - 1 1/2
	Armyworms ¹	1/4 - 3
	Ello Moth (Hornworm)	1/4 - 1 1/2
	Io Moth	1/4 - 1 1/2
	Oleander Moth	1/4 - 1 1/2
	Azalea Caterpillar	1/4 - 1 1/2
Fruiting Vegetables such as Tomatoes, Peppers and Eggplant	Loopers	1/4 - 1 1/2
	Hornworm	1/4 - 1 1/2
	Tomato Fruitworm	1/4 - 1 1/2
	Variegated Cutworm	1/4 - 1 1/2
	Saltmarsh Caterpillar	1/4 - 1 1/2
	Armyworms ¹	1/4 - 3
Greenhouse/Shadehouse and Outdoor Nursery Crops such as Leafy Herbs, Brassica and Fruiting groups	Loopers	1/4 - 1 1/2
	<i>Heliothis</i>	1/4 - 2
	Armyworms ¹	1/4 - 3
Herbs, Spices and Mints such as Basil, Chives, Dill, Leeks and Peppermint	Looper	1/4 - 1 1/2
	Saltmarsh Caterpillar	1/4 - 1 1/2
	Armyworms ¹	1/4 - 3

APPLICATION RATE (Continued)

Crop Group (Miscellaneous)	Pests	Pounds/Acre
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	1/4 - 1 1/2
	Omnivorous Leafroller	1/4 - 1 1/2
	Hornworms	1/4 - 1 1/2
	Imported Cabbageworm	1/4 - 1 1/2
	Diamondback Moth ⁴	1/4 - 1 1/2
	Green Cloverworm	1/4 - 1 1/2
	Webworm	1/4 - 1 1/2
	Saltmarsh Caterpillar	1/4 - 1 1/2
	Armyworms ¹	1/4 - 3
	Cutworms	1/4 - 1 1/2
Legume Vegetables (succulent or dried) and foliage of legume vegetables such as Beans, Peas, Lentils and Soybeans	Cross-striped Cabbageworm	1/4 - 1 1/2
	<i>Heliothis</i>	1/4 - 2
	Loopers	1/4 - 1 1/2
	Soybean Looper	1/4 - 2
	Green Cloverworm	1/4 - 1 1/2
	Velvetbean Caterpillar	1/4 - 2
Root and Tuber such as Artichokes, Carrots, Potatoes, Beets and Sugar beets Leaves of Root and Tuber vegetables (human food or animal feed) such as Turnip, Garden Beet or Sugar Beet	Armyworms ¹	1/4 - 3
	Podworms ¹	1/4 - 2
	Loopers	1/4 - 1 1/2
	Omnivorous Leafroller	1/4 - 1 1/2
	Hornworms	1/4 - 1 1/2
	Imported Cabbageworm	1/4 - 1 1/2
	Diamondback Moth ⁴	1/4 - 1 1/2
	Green Cloverworm	1/4 - 1 1/2
	Webworm	1/4 - 1 1/2
	Saltmarsh Caterpillar	1/4 - 1 1/2
	Armyworms ¹	1/4 - 3
	Cutworms	1/4 - 1 1/2
	Cross-striped Cabbageworm	1/4 - 1 1/2
	<i>Heliothis</i>	1/4 - 2

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APPLICATION RATE (Continued)

Crop Group (Miscellaneous)	Pest	Pounds/Acre
Stone Fruit such as Cherry, Plum, Peach, Prune and Nectarine Pome Fruit such as Apples and Pear Tree Nuts such as Almond, Pecan, Walnut and Filbert Pomegranates	Redhumped Caterpillar	1/4 - 3
	Tent Caterpillars	1/4 - 3
	Omnivorous Leafroller	1/4 - 3
	Fall Webworm	1/4 - 3
	Walnut Caterpillar	1/4 - 3
	Cankerworms	1/4 - 3
	Gypsy Moth	1/4 - 3
	Variegated Leafroller	1/4 - 3
	Redbanded Leafroller	1/4 - 3
	Tufted Apple Budmoth	1/4 - 3
	Fruittree Leafroller	1/4 - 3
	Oriental Fruit Moth	1/4 - 3
	Cutworms	1/4 - 3
	Filbert Leafroller	1/4 - 3
	Obliquebanded Leafroller	1/4 - 3
	Codling Moth	1/4 - 3
	Armyworms ¹	1/4 - 3
	Twig Borer	1/4 - 3
Cereal Grains	Loopers	1/4 - 2
	Armyworms ¹	1/4 - 3
Tropical Fruits	Armyworms ¹	1/4 - 3
	Hornworm	1/4 - 2
	Leafrollers	1/4 - 2
	Omnivorous Looper	1/4 - 2
	Loopers	1/4 - 2

APPLICATION RATE

Other Crops:	Pests	Pounds/Acre
Asparagus	Armyworms ¹	1/4 - 3
Avocado	Armyworms ¹ Amorbia Moth Omnivorous Leafroller Omnivorous Looper Orange Tortrix Spanworm	1/4 - 3 1/4 - 2 1/4 - 2 1/4 - 2 1/4 - 2 1/4 - 2
Bananas	Armyworms ¹ Banana Skipper	1/4 - 3 1/4 - 1 1/2
Canola (Rape)	Looper Armyworms ² <i>Heliothis</i>	1/4 - 2 1/4 - 3 1/4 - 2
Citrus Fruits	Armyworms ¹ Fruitree Leafroller Orangedog Citrus Cutworm ³	1/4 - 3 1/4 - 2 1/4 - 2 1/4 - 2
Corn (Sweet, Field, Seed and Popcorn) Sorghum	<i>Heliothis</i> ⁵ Armyworms ¹ Headworms European Corn Borer	1/2 - 3 1/4 - 3 1/4 - 2 1/4 - 2
Cotton	Tobacco Budworm ² Cotton Bollworm ² Loopers Saltmarsh Caterpillar Armyworms ¹	1/4 - 3 1/4 - 3 1/4 - 3 1/4 - 3 1/4 - 3
Hops	Loopers Armyworms ¹	1/4 - 2 1/4 - 3
Kiwi Fruit	Armyworms ¹ Omnivorous Leafroller	1/4 - 3 1/4 - 2
Malanga	Saltmarsh Caterpillar Armyworms ¹	1/4 - 2 1/4 - 3
Peanuts	Armyworms ¹ Loopers Velvetbean Caterpillar Green Cloverworm Podworms ¹	1/4 - 3 1/4 - 1 1/2 1/4 - 1 1/2 1/4 - 1 1/2 1/4 - 1 1/2

APPLICATION RATE (Continued)

Other Crops	Pests	Pounds/Acre
Pineapple	Armyworms ¹ Gummosos-Batrachedra comosae (Hodges) Thecla-Thecla basilides (Geyr)	1/4 - 3 1/4 - 1 1/2 1/4 - 1 1/2
Safflower	Loopers Saltmarsh Caterpillar Armyworms ¹	1/4 - 2 1/4 - 2 1/4 - 3
Sunflowers (Ground Application only)	Armyworms ¹ Loopers Head Moth	1/4 - 3 1/4 - 2 1/4 - 2
Tobacco	Armyworms ¹ Tobacco Budworm Hornworms Loopers	1/4 - 3 1/4 - 2 1/4 - 2 1/4 - 2
Turf	Armyworms ¹ Sod Webworm	1/4 - 3 1/2 - 2

¹XenTari may be used to control armyworms and/or podworms. For best results, apply full coverage sprays when 1st or 2nd instar larvae are present. Repeat treatment as necessary. Under rapidly increasing populations, use the highest labeled rate, or tank-mix with a contact insecticide. Against heterogeneous armyworm populations where 4th and 5th instar larvae are present, a contact insecticide in combination with XenTari 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.

⁴For best results, use a ground applicator, a minimum of 50 gallons total mix per acre, 50-100 psi and 3-7 nozzles per bed.

⁵Use XenTari alone to suppress light to moderate populations of *Heliothis* on corn or sorghum. A contact insecticide in combination with XenTari is recommended to control moderate to heavy populations.

APPLICATION RATE

XenTari for Trees and Forests⁵ (For all states except California)

Crop	Pest	lbs/100 gallons ⁶
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

⁵Forest, Shade, Sugar Maple Trees and Ornamentals.

⁶Rate for hydraulic sprayer. For mist blowers, mix the applicable amount (lbs.) in 10 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.

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APPLICATION RATE

XenTari FOR STORED AGRICULTURAL COMMODITIES (For all States except California)

GRAINS, SOYBEANS, SUNFLOWER SEED, CROP SEED, CONDIMENTAL SEEDS, SPICES, HERBS, BIRDSEED AND POPCORN

Pest

Rate

Indian Meal Moth⁶
Almond Moth⁵

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 lb. 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.

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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.

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NOTICE TO BUYER

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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