



U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Biopesticides and Pollution Prevention Division  
(7511C) 401 M St., S.W.  
Washington, D.C. 20460

EPA Reg. Number:  
55638-42

Date of Issuance:  
JUN 22 1999

NOTICE OF PESTICIDE:  
 X  Registration  
\_\_\_\_\_ Reregistration

Term of Issuance:  
Conditional

Name of Pesticide Product:  
Lepinox®XL WDG  
Insecticide

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Ecogen, Inc.  
2005 Cabot Blvd. West  
Langhorne, PA 19047-3023

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Biopesticides and Pollution Prevention Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data.
2. Make the following label changes listed below before you release the product for shipment:
  - a. Indicate your EPA REG. No. as "55638-42."
  - b. Delete your potency units and statements from below the ingredients statement.
3. Submit a revised Confidential Statement of Formula (CSF) that lists a nationally-recognized culture collection accession number for the active ingredient. We note that currently your CSF dated 11/19/98 is the basic and only CSF acceptable to formulate this product.
4. Submit a 10-day *Daphnia magna* study as described in the *Bacillus thuringiensis* RED within nine (9) months. Dose levels should take into consideration the results of the previous *B. thuringiensis* EG7826 *Daphnia magna* study so that a comparison can be made. We note that if there is a higher *Daphnia* mortality level than seen in the previous study, the report must be forwarded immediately as a 6(a)(2) submission.

Signature of Approving Official:

*JZA see next page*

Date:

JUN 22 1999

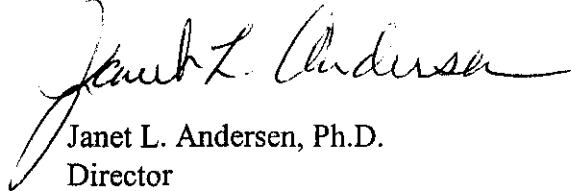
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5. Submit five(5) copies of the revised final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for a further description of final printed labeling.

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.

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

Sincerely,



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

Enclosure



Lepinox® XL wdg water-dispersible granule insecticide is for the control of lepidopterous pests.

Active Ingredient:

Bacillus thuringiensis EG7826..... 31.00%
Lepidopteran active toxins
Cry1Aa, Cry1Ac, Cry1Ac/1F, Cry2A

Other Ingredients ..... 69.00%
TOTAL ..... 100.00%

Potency: 87,500 Fall Armyworm Units per milligram of product. There is no direct relationship between intended activity (potency) and the Percent Active Ingredient by weight.

KEEP OUT OF REACH OF CHILDREN

WARNING

AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

STATEMENT OF PRACTICAL TREATMENT

If In Eyes: Hold eyelid open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear goggles or faceshield. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

- Long sleeved shirt and long pants
• Shoes plus socks
• Protective eyewear

ACCEPTED with COMMENTS In EPA Letter Dated JUN 22 1999 Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 55635-42

As a general precaution when exposed to potentially high concentrations of living microbial products such as this, all mixer/loaders and applicators must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95.

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

ENVIRONMENTAL HAZARDS

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 by cleaning of equipment or disposal of equipment washwaters.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in a cool, dry place inaccessible to children.

Pesticide Disposal: Do not contaminate water when disposing of equipment washwaters. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: 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

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

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.



EPA REG. No. 55638
EPA EST. No. 067367-MN-001
Net Contents: 5 and 20 U.S. Pound Bags

Ecogen Inc.
2005 Cabot Blvd. West, P.O. Box 3023
Langhorne, PA 19047-3023
215/757-1590 or 800/220-2135



**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 section only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 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, shoes plus socks, and protective eyewear.

**NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to the 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.

**Do not enter treated areas without protective clothing until sprays have dried.**

**Preharvest Interval:** LEPINOX XL WDG may be applied to the crops listed in the APPLICATION RATE TABLE at any time, up to and on the day of harvest.

**Mode of Action:** LEPINOX XL WDG contains a mixture of lepidopteran toxic proteins. The primary active components are Cry1Ac/1F chimeric, Cry1Ac and Cry2A proteins. After consuming a lethal dose of LEPINOX XL WDG, larvae will cease to feed, but may remain alive on foliage for several days before disappearing. Immediately after ingestion of LEPINOX XL WDG, larvae begin to move slowly, become discolored, shrivel and blacken prior to death.

**MIXING INSTRUCTIONS**

LEPINOX XL WDG may be applied with conventional ground, aerial or hand-held application equipment with quantities of water sufficient to provide thorough coverage of infested plants. To obtain a suitable mixture with water, add enough water to allow maximum agitation. With agitator running, slowly add in the LEPINOX XL WDG. Continue agitation. Add remainder of water and other spray materials and agitate until mixed. When more than one product is being added to the spray mix, LEPINOX XL WDG should always be added first. Maintain suspension while loading and spraying. Do not mix more LEPINOX XL WDG than can be used in a 12-hour period. Rinse and flush spray equipment thoroughly following each use. Do not contaminate water when disposing of equipment washwaters.

In order to make proper decisions on application rates to be used, follow the recommendations in the APPLICATION RATE TABLE.

**APPLICATION INSTRUCTIONS**

LEPINOX XL WDG is an insecticide for use against the lepidopterous larvae listed in the APPLICATION RATE TABLE. Larvae must consume deposits of LEPINOX XL WDG to be affected. Always follow these directions:

- Make applications when larvae are still small (early instars <1/2" in length) and actively feeding on foliage or other plant parts.
- Make applications before noticeable foliar damage occurs.
- Thorough spray coverage is essential for good insect control. For ground applications, directed drop nozzles should be used for certain vegetable crops.
- For ground applications, use a spray volume of at least 20 gallons of water per acre. For aerial applications, use a spray volume of at least 5 gallons of water per acre. (See cotton and soybeans for special instructions).
- For orchard applications, a spray volume of 100 gallons per acre and treatment of each row is recommended.
- Do not use screens smaller than 50 mesh.
- When insect infestations are heavy, use the higher label rates, shorten the spray interval, and/or use larger total spray volume to improve spray coverage.
- Applications should be repeated at an interval sufficient to maintain control, depending upon plant growth, insect pressure and weather conditions after spraying.
- For crops such as Fruits, Nuts and Vines, applications are often timed to stage of development and recommendations from local Extension personnel should always be followed.
- Local conditions may affect the use of LEPINOX XL WDG. Consult your State Agricultural Extension Specialist for specific recommendations related to local crop protection problems.
- Spray water/spray tank solutions should not exceed pH 8.0. If necessary, buffer water to near neutral pH.

**HAND-HELD EQUIPMENT**

When using hand-held equipment, mix 2 teaspoons per gallon of water or 1.5 pounds per 100 gallons of spray solution. Spray to wet, but not to runoff.

**TANK-MIX**

Combinations of LEPINOX XL WDG with commonly used insecticides, fungicides or other spray tank adjuvants are generally not deleterious to performance. It is advisable to test physical compatibility by mixing all components in a small container in proportionate quantities prior to mixing in spray tank. When more than one product is being added to the spray mix, LEPINOX XL WDG should always be added first. This product cannot be mixed with any product containing a label prohibition against such mixing. No label dosage rate should be exceeded. Application must be made in accordance with the more restrictive of label limitations and precautions.

- For improved durability of spray deposits, a spreader/sticker approved for use on growing crops may be used for hard-to-wet crops such as cole crops.

## CHEMIGATION

Apply this product only through center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set or hand move sprinkler systems. **Do not apply this product through any other type of irrigation system.** Crop injury or lack of effectiveness can result from nonuniform distribution of treated water.

If you have questions about calibration, contact your State Extension Service Specialist, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.

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.

### CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS:

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone (RPZ), backflow preventer or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

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 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 system 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, or in cases where there is no water pump, 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.

### SPRINKLER CHEMIGATION:

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 system 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.

The active ingredient in LEPINOX XL WDG will settle in the tank and injection lines; adequate agitation must be provided before and during the injection period. Use only in systems that apply uniformly and have appropriate check valves. When application is complete, thoroughly flush the injection system and sprinkler lines.

### MIXING RECOMMENDATIONS FOR CHEMIGATION:

Follow general MIXING INSTRUCTIONS and keep the ratio at three parts water to one part LEPINOX XL WDG. Also, provide mild uniform agitation throughout the suspension but do not agitate excessively.

### SPRAY VOLUME:

For chemigation, use irrigation levels of 0.15 to 0.5 inches of water per acre. Up to 1.0 inch of irrigation water may be used, but efficacy may be reduced. The product should be applied continuously for the duration of the water application.

APPLICATION RATE TABLE

I. VEGETABLES  
(Fresh and Processed)

Crop such as:	Insect Pest
Asparagus Beans Beets Celery Chick peas Cucumber Cucurbits Leeks Lentils Melons (Cantaloupe, Crenshaw, Honeydew, Muskmelon, Watermelon, etc.) Okra Parsley Peas Pumpkins Soybean foliage Spinach Squash Sugar beets Tomatoes	Armyworm Beet armyworm Cabbage looper Corn earworm European corn borer Fall armyworm Melonworm Omnivorous leafroller Pickworm Rindworm Tobacco budworm Yellowstriped armyworm

Rate/Acre: 0.5-1.5 pounds

II. PASTURE & HAY CROPS

Crop such as:	Insect Pest
Alfalfa (hay & seed) Pasture (grasses & hay) Silage	Alfalfa caterpillar Armyworm Beet armyworm* European skipper Fall armyworm Loopers* Webworm Yellowstriped armyworm*

Rate/Acre: 0.5-1.5 pounds

\* Product should be applied when early instar larvae first appear. If infestation persists, make a second application 7-10 days later. Combination of LEPINOX XL WDG with a contact insecticide is recommended for control of 1st and 5th instar larvae.

III. TURF

Crop such as:	Insect Pest
Turf	Armyworm Fall armyworm Sod webworm Tropical sod webworm

Rate/Acre: 0.5-1.5 pounds

IV. FIELD, NUT & VINE CROPS

Crop such as:	Insect Pest
<b>Pome &amp; Stone Fruit Trees:</b> Apples Apricots Cherries Nectarines Peaches Pears Plums Prunes Quince	Cankerworm (Spring & Fall) Cherry fruitworm Eastern tent caterpillar Fall webworm Fruitree leafroller Green fruitworm Gypsy moth Navel orangeworm Obliquebanded leafroller Omnivorous leafroller Oriental fruit moth Pandemis leafroller Peach twig borer Redbanded leafroller Redhumped caterpillar Tortrix moth (Orange & Garden) Tufted apple budmoth Variegated leafroller Walnut caterpillar Western tent caterpillar
<b>Nut Trees:</b> Almonds Chestnuts Filberts Pecans Pistachios Walnuts	Citrus cutworm Filbert leafroller Filbert webworm Fruitree leafroller Hickory shuckworm Navel orangeworm Obliquebanded leafroller Omnivorous leafroller Pecan nut casebearer Peach twig borer Redhumped caterpillar Roughskinned cutworm Western tent caterpillar
Citrus	Amorbia Citrus cutworm Fruitree leafroller Omnivorous leafroller Orangedog
Grapes	Grape berry moth Cherry fruitworm Grape leafroller Grapeleaf skeletonizer Green fruitworm Omnivorous leafroller Orange tortrix Saltmarsh caterpillar Yellowstriped armyworm

Rate/Acre: 0.5-1.5 pounds

## V. FIELD CROPS

Crop such as:	Insect Pest
Corn (Field, Sweet, Popcorn, Seed)	Armyworm European corn borer Fall armyworm Southwestern corn borer
Cotton*	Bollworm Cabbage looper Cotton leaf perforator Fall armyworm Saltmarsh caterpillar Soybean looper Tobacco budworm
Peanuts	Fall armyworm Green cloverworm Loopers Podworm Rednecked peanut worm Velvetbean caterpillar
Small Grains (Barley, Oats, Rye, Wheat, etc.)	Armyworm Loopers Fall armyworm
Sorghum	European corn borer Fall armyworm Headworm Saltmarsh caterpillar Velvetbean caterpillar
Soybeans**	Fall armyworm Green cloverworm Podworm Soybean looper Velvetbean caterpillar
Tobacco	Loopers Tobacco budworm Tobacco hornworm

Rate/Acre: 0.5-1.5 pounds

**Cotton**

\* Use of LEPINOX XL WDG in integrated pest management programs:

- LEPINOX XL WDG can be used alone to control light to moderate populations of newly hatched worms at the rates specified above, depending upon insect pressure. Repeat treatments at 4 to 5 day intervals as long as necessary until results are acceptable. Banded applications can be applied at 0.25 to 0.5 lb/acre pre-bloom.
- For control of bollworm and tobacco budworm, LEPINOX XL WDG can be mixed with conventional chemicals such as carbamates, organophosphates, pyrethroids, or spinosads, in accordance with the more restrictive of label limitations and precautions. No label dosage rates should be exceeded. This product can not be mixed with any product containing a label prohibition against such mixing.
- Treat only 1st and 2nd instar larvae 1/4" or less in length.
- For ground applications, use a minimum of 5 gallons of water per acre. For aerial applications, use a minimum of 3 gallons of water per acre. Increasing total spray volume per acre will improve coverage and product performance.
- Short residual contact materials may be tank-mixed with LEPINOX XL WDG to control secondary pests such as boll weevil, aphids and lygus bugs.
- Under low level infestations (<5% insect or eggs per acre), LEPINOX XL WDG can be used at 0.25 pounds per acre alone or in combination with foliar fertilizers or other approved applications.

**Soybeans**

\*\* For ground applications, use a minimum of 5 gallons of water per acre. For aerial applications, use a minimum of 3 gallons of water per acre. Increasing total spray volume per acre will improve coverage and product performance.

### WARRANTY AND CONDITIONS OF SALE

Ecogen warrants that this product conforms to the description on this label and is reasonably fit for the purposes stated on this label when used in accordance with the directions on this label under normal conditions of use.

ECOGEN MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

If this product is defective, Buyer's exclusive remedy shall be the replacement of the product, or if replacement is impracticable, refund of the purchase price. In no case will Ecogen be liable for incidental, consequential or special damages resulting from the handling, storage or use of this product.

