

MAY 10 1999

Marvin H. Alphin
 Program Manager
 Abbott Laboratories
 Chemical & Agricultural Products Division
 Dept. 28R, Bldg. A1
 1401 Sheridan Road
 North Chicago, IL 60064-6316

Dear Mr. Alphin:

Subject: Foray 48F Biological Insecticide Flowable Concentrate
 EPA Reg. No. 275-98
 Application for a label amendment dated April 19, 1999

On April 19, 1999, you submitted an application to amend the subject label. Revisions are made to:

Delete the sentence "Do not enter treated areas without protective clothing until sprays have dried" under the Non-Agricultural Use Site Directions for Use section.

The labeling amendment referred to above under the Federal Insecticide, Fungicide, and Rodenticide Act as amended is acceptable, subject to the following comments:

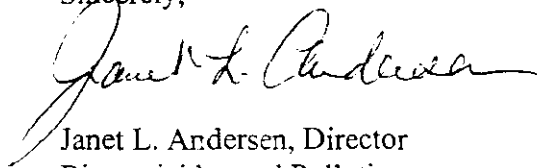
- 1) The deletion of the referenced sentence above is acceptable for aerial application. However, the directive is still applicable for ground-based applications. Therefore, the following sentence should replace the deleted sentence: "For ground application only: Do not enter treated areas without protective clothing until sprays have dried." A copy of the risk assessment stating the Agency's position on this matter is enclosed for your review.

- 2) Please be aware that the revised label language from #1 above may be reevaluated when all Bt labels are assessed for compliance with the Bt RED.

CONCURRENCES							
SYMBOL	7511C						
SURNAME	Reynolds						
DATE	5/6/99						

A stamped copy of the label for the subject product is enclosed for your records. Please submit five (5) copies of the final printed label for Foray 48F prior to release of the product for shipment.

Sincerely,



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

Enclosures

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FORAY 48F
BIOLOGICAL INSECTICIDE
FLOWABLE CONCENTRATE

Active Ingredient:

Bacillus thuringiensis subsp. *kurstaki* protein toxins.....5.7% w/w

Inert Ingredients:.....94.3% w/w

Total:.....100.0% w/w

Potency: 11,800 Forestry Toxic Units (FTU) of Potency per mg or
48 Billion Forestry Toxic Units per gallon

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

STATEMENT OF PRACTICAL TREATMENT

If on skin: Wash with plenty of soap and water. Get medical attention if irritation persists.

If in eyes: Immediately flush eyes with plenty of water. Get medical attention if irritation persists.

Chemical and Agricultural Products Division
Abbott Laboratories
North Chicago, IL 60064

EPA Registration No. 275-98
EPA Est. No. 33762-IA-1

Net Contents:

ACCEPTED
with COMMENTS
In EPA Letter Dated

MAY 10 1999

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

275-98

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS & DOMESTIC ANIMALS
CAUTION**

Harmful if swallowed or absorbed through the skin.
Avoid contact with skin, eyes or clothing.

Personal Protective Equipment

Some materials that are chemical-resistant to this product are listed below.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Waterproof gloves.
- Shoes plus socks.

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.

ENVIRONMENTAL HAZARDS

Do not contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

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

STORAGE AND DISPOSAL

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

Storage: Keep containers tightly closed when not in use. Do not store at temperatures below 0° F or above 90° F. Roll or shake the drum before dispensing.

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

Container Disposal: Triple rinse (or equivalent), puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

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DIRECTIONS FOR USE FOREST, TREES AND SHRUBS

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

Foray 48F 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 Foray 48F to be affected. Always follow these directions:

- Treat when larvae are young (early instars) before the trees are damaged.
- Larvae must be actively feeding on treated, exposed plant parts.
- Thorough spray coverage is needed to provide a uniform deposit of Foray 48F at the site of larval feeding.
- Under heavy pest population pressure, use the higher label rates and/or consider a second application.
- If attempting to control a pest with a single spray, make the treatment when egg hatch is essentially complete, but before tree damage occurs.
- An approved spreader-sticker may be added to diluted tank mixes to improve weather-fastness of the spray deposits. Do not add a sticker to undiluted product.

After eating a lethal dose of Foray 48F, larvae stop feeding within the hour and will die within several days. Dying larvae move slowly, discolor, then shrivel, blacken and die.

Foray 48F is completely water miscible and may be applied through conventional ground or aerial equipment with quantities of water sufficient to provide thorough coverage of infested plant parts. The volume of water needed per acre will depend on weather, spray equipment and plant canopy type. Foray 48F can be mixed in any ratio with water. Mild agitation is sufficient to maintain the mixture in suspension during mixing, loading and spraying. Do not mix more Foray 48F that can be used in a 144 hour period.

Foray 48F can also be applied undiluted from aircraft for control of Spruce Budworm, Hemlock Looper, Jack Pine Budworm, and Gypsy Moth. It is recommended that rotary or other atomizers be used to provide droplet Volume Median Diameters (VMD) of 60-100 microns for needle conifers and 50-150 microns for deciduous hardwoods. After prolonged storage, undiluted Foray 48F should be recirculated once to redistribute prior to use. During loading and spraying, agitation of the undiluted product is unnecessary and should be avoided.

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Foray 48F may be used to protect trees and shrubs such as in:

- Forests
- Residential, municipal, and shade tree areas
- Recreational areas such as campgrounds, golf courses, parks, and parkways
- Ornamental, shade, tree and forest nurseries
- Shelterbelts, rights of way, and other easements
- Production sugar maples

Foray 48F FOR FOREST, TREES AND SHRUBS

Crop	Pest	oz/100 Gal/A* (Ground Equipment)	oz/A (Aerial** Application)	BFTUs/A***
Forest, Shade, Sugar Maple, Seed Orchards, Trees & Shrubs	Bagworm	21 to 43	21 to 43	8 to 16
	Blackheaded Budworm	21 to 64	21 to 64	8 to 24
	Browntail Moth	21 to 30	21 to 80	8 to 30
	California Oakworm	11 to 43	11 to 43	4 to 16
	Douglas Fir Tussock Moth	21 to 30	21 to 80	8 to 30
	Eastern Tent Caterpillar	43 to 64	43 to 64	16 to 24
	Elm Spanworm	21 to 64	21 to 64	8 to 24
	Fall Webworm	21 to 64	21 to 64	8 to 24
	Forest Tent Caterpillar	21 to 64	21 to 64	8 to 24
	Fruitree Leafroller	11 to 21	-	4 to 8
	Green Striped Maple Worm	21 to 43	21 to 43	8 to 16
	Gypsy Moth	21 to 128	21 to 128	8 to 48
	Asian Gypsy Moth	21 to 128	21 to 128	8 to 48
	Jack Pine Budworm	21 to 64	21 to 64	8 to 24
	Mimosa Webworm	11 to 21	-	4 to 8
	Oak Leafier	21 to 64	21 to 64	8 to 24
	Pine Butterfly	21 to 43	21 to 43	8 to 16
	Redhumped Caterpillar	11 to 43	11 to 43	4 to 16
	Saddleback Caterpillar	11 to 43	-	4 to 16
	Saddled Prominent Caterpillar	11 to 43	11 to 43	4 to 16
	Spring & Fall Cankerworm	21 to 64	21 to 64	8 to 24
	Eastern Spruce Budworm ¹	21 to 128	21 to 128	8 to 48
	Western Spruce Budworm ¹	21 to 128	21 to 128	8 to 48
	Western Tussock Moth	21 to 43	21 to 43	8 to 16
	Eastern Hemlock Looper	43 to 64	43 to 64	16 to 24
	Western Hemlock Looper	43 to 64	43 to 64	16 to 24
	Eastern Pine Looper	43 to 64	43 to 64	16 to 24
	Leafrollers	21 to 43	21 to 43	8 to 16
	Buck Moth	43 to 107	43 to 107	16 to 40
	Oak Skeletonizer	21 to 43	21 to 43	8 to 16
Tortrix	21 to 43	21 to 43	8 to 16	
Coneworm	64 to 96	64 to 96	24 to 32	

Note: For Hemlock Looper, Eastern Pine Looper, and Coneworms, use 1 to 2 applications, diluted or undiluted, beginning at peak first instar.

*Water dilution rate for hydraulic sprayer may be varied depending on coverage. For mist blowers, mix the applicable amount (oz.) in up to 10 gallons of water.

** For diluted aerial application, use in up to 10 gallons of water depending on type and density of trees. For best results spray systems which deliver droplet size of 150 microns VMD or less should be used. Note: For Hemlock Looper and Eastern Pine Looper use 1-2 applications,

beginning at peak first instar. When applying two applications, first application is at peak first instar and second application is at second instar.

*** Billion Forestry Toxic Units per acre.

† Use rates greater than 21 ounces in Northern states for heavy populations.

NON-AGRICULTURAL USE SITE DIRECTIONS FOR USE

Not for use on plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes. For use on plants intended for aesthetic purposes or climatic modification and being grown in interior landscapes, ornamental gardens or parks, or on golf courses or lawns or grounds.

Not for use on trees being grown for sale or other commercial use, or for commercial seed production, or for the production of timber or wood products, or for research purposes except for wide-area public pest control programs sponsored by government entities, such as mosquito abatement, gypsy moth control, and Mediterranean fruit fly eradication.

Do not apply this product to the non-agricultural use sites through any type of irrigation system.

Do not apply when weather conditions favor drift from treated areas.

Foray 48F 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 Foray 48F to be affected. Always follow these directions:

- Treat when larvae are young (early instars) before the trees are damaged.
- Larvae must be actively feeding on treated, exposed plant parts.
- Thorough spray coverage is needed to provide a uniform deposit of Foray 48F at the site of larval feeding.
- Under heavy pest population pressure, use the higher label rates and/or consider a second application.
- If attempting to control a pest with a single spray, make the treatment when egg hatch is essentially complete, but before tree damage occurs.

- An approved spreader-sticker may be added to diluted tank mixes to improve weather-fastness of the spray deposits. Do not add a sticker to undiluted product.

After eating a lethal dose of Foray 48F, larvae stop feeding within the hour and will die within several days. Dying larvae move slowly, discolor, then shrivel, blacken and die.

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Foray 48F may be used to protect trees and shrubs such as in:

- Forests
- Residential, municipal, and shade tree areas
- Recreational areas such as campgrounds, golf courses, parks, and parkways
- Ornamental and shade trees
- Shelterbelts, rights of way, and other easements

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Foray 48F FOR FOREST, TREES AND SHRUBS

Crop	Pest	oz/100 Gal/A* (Ground Equipment)	oz/A (Aerial** Application)	BFTUs/A***
Forest Trees and Shrubs	Bagworm	21 to 43	21 to 43	8 to 16
	Blackheaded Budworm	21 to 64	21 to 64	8 to 24
	Browntail Moth	21 to 80	21 to 80	8 to 30
	California Oakworm	11 to 43	11 to 43	4 to 16
	Douglas Fir Tussock Moth	21 to 80	21 to 80	8 to 30
	Eastern Tent Caterpillar	43 to 64	43 to 64	16 to 24
	Elm Spanworm	21 to 64	21 to 64	8 to 24
	Fall Webworm	21 to 64	21 to 64	8 to 24
	Forest Tent Caterpillar	21 to 64	21 to 64	8 to 24
	Fruittree Leafroller	11 to 21	-	4 to 8
	Green Striped Maple Worm	21 to 43	21 to 43	8 to 16
	Gypsy Moth	21 to 128	21 to 128	8 to 48
	Asian Gypsy Moth	21 to 128	21 to 128	8 to 48
	Jack Pine Budworm	21 to 64	21 to 64	8 to 24
	Mimosa Webworm	11 to 21	-	4 to 8
	Oak Leaf-tier	21 to 64	21 to 64	8 to 24
	Pine Butterfly	21 to 43	21 to 43	8 to 16
	Redhumped Caterpillar	11 to 43	11 to 43	4 to 16
	Saddleback Caterpillar	11 to 43	-	4 to 16
	Saddled Prominent Caterpillar	11 to 43	11 to 43	4 to 16
	Spring & Fall Cankerworm	21 to 64	21 to 64	8 to 24
	Eastern Spruce Budworm ¹	21 to 128	21 to 128	8 to 48
	Western Spruce Budworm ¹	21 to 128	21 to 128	8 to 48
	Western Tussock Moth	21 to 43	21 to 43	8 to 16
	Eastern Hemlock Looper	43 to 64	43 to 64	16 to 24
	Western Hemlock Looper	43 to 64	43 to 64	16 to 24
	Eastern Pine Looper	43 to 64	43 to 64	16 to 24
	Leafrollers	21 to 43	21 to 43	8 to 16
	Buck Moth	43 to 107	43 to 107	16 to 40
	Oak Skeletonizer	21 to 43	21 to 43	8 to 16
	Tortrix	21 to 43	21 to 43	8 to 16
	Coneworm	64 to 96	64 to 96	24 to 32

Note: For Hemlock Looper, Eastern Pine Looper, and Coneworms, use 1 to 2 applications, diluted or undiluted, beginning at peak first instar.

*Water dilution rate for hydraulic sprayer may be varied depending on coverage. For mist blowers, mix the applicable amount (oz.) in up to 10 gallons of water.

** For diluted aerial application, use in up to 10 gallons of water depending on type and density of trees. For best results spray systems which deliver droplet size of 150 microns VMD or less should be used. Note: For Hemlock Looper and Eastern Pine Looper use 1-2 applications, beginning at peak first instar. When applying two applications, first application is at peak first instar and second application is at second instar.

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*** Billion Forestry Toxic Units per acre.

¹ Use rates greater than 21 ounces in Northern states for heavy populations.

NOTICE TO USER

Seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning 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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