

70051-27

03/08/2004

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AZATIN® XL
INSECT GROWTH REGULATOR

FOR INDOOR AND OUTDOOR USE ON ORNAMENTALS, TURF, AGRONOMIC
AND HORTICULTURAL CROPS

ACTIVE INGREDIENT:

| | |
|-------------------------|--------|
| Azadirachtin*..... | 3.0% |
| OTHER INGREDIENTS | 97.0% |
| TOTAL..... | 100.0% |

*Contains 0.265 pounds (120 grams) of azadirachtin per gallon

Net contents: 1 quart
Certis USA, L.L.C.
Suite 175
9145 Guilford Road
Columbia, MD 21046

E.P.A. Registration No. 70051-27
E.P.A. Est. No. 44616-MO-01
Lot No. _____

If you have questions or comments regarding the use of this product, please call (800)
250-5024

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed or inhaled. Avoid breathing vapors or spray mist. Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- chemical resistant gloves such as barrier laminate or Viton (≥ 14 ml)
- shoes plus socks, and
- protective eye wear.

Follow the 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.

ACCEPTED
MAR 08 2004
Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under
EPA Reg. No. 70051-27

FIRST AID

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything to an unconscious person.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. Hot Line Number: 1-800-255-3924.

USER SAFETY RECOMMENDATIONS

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. For Terrestrial Uses: Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

PHYSICAL OR CHEMICAL HAZARDS

Combustible: Do not use or store near heat or open flame.

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.

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 interval. The requirements in this box 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 4 hours.

For early entry into 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, wear:

- Coveralls.
- Chemical-resistant gloves, such as barrier laminate or butyl rubber or nitrile rubber or neoprene rubber or polyvinylchloride (PVC) or Viton.
- Shoes plus socks.
- Protective Eyewear

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 Standards for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, or greenhouses. For other uses including golf courses, and other non-agricultural uses, do not enter treated areas without protective clothing until sprays have dried.

Pests controlled by AZATIN-XL

Ants

Argentine Ant

Aphids:

Alfalfa Aphid

Apple Aphid

Bean Aphid

Cabbage Aphid

Cooly Spruce Aphid

Corn Root Aphid

Cotton Aphid

Cow pea Aphid

Eastern Spruce Gall Aphid

Grapevine Aphid

Green Peach Aphid

Hickory Leafstem Gall

Aphid

Hop Aphid

Melon Aphid

Pea Aphid

Pine bark Aphid

Potato Aphid

Red Aphid

Rose Aphid

Russian Wheat Aphid

Spruce Gall Aphid

Strawberry Aphid

Tobacco Aphid

White Root Aphid

Woolly Apple Aphid

Woolly Hemlock Aphid

Yellow Pecan Aphid

Armyworms, such as:

Beet Armyworm

Fall Armyworm

Lawn Armyworm

Southern Armyworm

Yellow Striped Armyworm

Bagworms

Beetles, Grubs, and

Weevils, such as:

Alfalfa Weevil

Banded Cucumber Weevil
 Bean Leaf Weevil
 Bean Weevil
 Billbugs
 Black Vine Weevil
 Blister Beetle
 Bluegrass Weevil
 Cigarette Beetle
 Cowpea Beetle
 Colorado Potato Beetle
 Cucurbit Beetle
 Douglas Fir Beetle
 Dusky Sap Beetle
 Elm Bark Beetle
 Elm Leaf Beetle
 Flea Beetle
 Grape Phylloxera
 Green June Beetle
 Ips Bark Beetle
 Japanese Beetle
 Japanese Weevil
 June Beetle
 May Beetle
 Mexican Bean Beetle
 Mexican Bean Weevil
 Mountain Pine Beetle
 Pales Weevil
 Pine Bark Weevil
 Pine Root Collar Weevil
 Pecan Weevil
 Plum Curculio
 Rose Chafer
 Southern Pine Beetle
 Southern Corn Rootworm
 Spotted Cucumber Beetle
 Strawberry Weevil
 Strawberry Root Weevil
 Sweet Potato Beetle
 Two Banded Japanese Weevil
 Twig Girdles
 Western Corn Rootworm
 White-Fringed Beetle
 White Pine Weevil
 Wireworms

Borers, such as:
 Azalea Stem Borer
 Bronze Birch Borer
 Dogwood Twig Borer
 Dogwood Borer
 Iris Borer
 Lilac Borer
 Mint Root Borer
 Oak Borer
 European corn Borer
 Southwestern Corn Borer
 Peachtree Borer
 Peachtwig Borer
 Rhododendron Borer

Budworms, such as:
 Blackhead Budworms
 Spruce Budworms
 Tobacco Budworms
 Western Spruce Budworms

Bugs, such as:
 Alfalfa Plant Bug
 Boxelder Bug
 Chinch Bug
 Green Bug
 Lygus Bug
 Southern Brown Stink Bug
 Southern Green Stink Bug
 Squash Bug
 Tarnished Plant Bug

Cankerworms, such as:
 Fall Cankerworm
 Spring Cankerworm

Caterpillar and Loopers, such as:
 Alfalfa Caterpillar
 Blackhead Budworm
 Cabbage Butterfly
 Cabbage Looper
 Corn Ear Worm
 Cranberry Fruitworm
 Dagger-moth
 Diamondback Moth

Green Clover Worm
 Horn Worm
 Hickory Shuck Worm
 Imported Cabbage Worm
 Melon Rind Worm
 Naval Orange Worm
 Orange Tortrix
 Pecan Nut-Casebearer
 Pickleworms
 Pink Bollworm
 Range Caterpillar
 Red Humped Caterpillar
 Soybean Looper
 Salt Marsh Caterpillar
 Tent Caterpillar
 Tobacco Budworm
 Tobacco Hornworm
 Tomato Fruitworm
 Tomato Pinworm
 Velvetbean Caterpillar
 Grape Leaf Skeletonizer

Centipedes

Chafers, such as:
 European Chafer
 Northern Masked Chafer
 Rose Chafer
 Southern Masked Chafer

Crickets, such as:
 Mole Cricket
 Mormon Cricket

Cutworms, such as:
 Black Cutworm
 Citrus Cutworm
 Climbing Cutworm
 Western Bean Cutworm
 Variegated Cutworm

Flies, such as:
 Caribbean Fruit Fly
 Crane Fly
 Fungus Gnat
 Hessian Fly

Mushroom Fly
 Oriental Fruit Fly
 Phorid Fly
 Mediterranean Fruit Fly
 Melon Fly
 Shore Fly
 Walnut Husk-Fly

Grasshoppers and Locusts
Leaf Tiers and Leafholders

Leafhoppers, such as:
 Grape Leafhopper
 Potato Leafhopper
 Variegated Leafhopper

Leafminers, such as:
 Boxwood Leafminer
 Citrus Leafminer
 Elm Leafminer
 Holly Leafminer
 Serpentine Leafminer
 Vegetable Leafminer

Leafrollers, such as:
 Blueberry Leafroller
 Grape Leafroller
 Filbert Leafroller
 Fruitree Leafroller
 Oblique Banded Leafroller
 Omnivorous Leafroller

Leaf perforators Marsh
Crane Flies Mealybugs

Midges, such as:
 Chrysanthemum Gall
 Midge
 Douglas Fir Midge
 Rose Midge

Millipedes

Mites, such as:
 Banks Mite
 Clover Mite

Citrus Rust Mite
 Citrus Red Mite
 European Red Mite
 Hemlock Rust Mite
 Honey Locust Mite
 Pacific Mite
 Spruce Mite
 Two-spotted Mite

Moths, such as:

Amorbia
 Almond Moth
 Artichoke Plume Moth
 Codling Moth
 Cranberry Girdle Moth
 European Pine Shoot Moth
 Grape Berry Moth
 Gypsy Moth
 Head Moth
 Oriental Fruit Moth
 Pine Tip Moth
 Sunflower Bud Moth
 Sunflower Moth
 Tiger Moth
 Tobacco Hornworm Moth
 Tufted Apple Bud Moth
 Tussock Moth

Nematodes, such as:

Banana Nematode
 Citrus Nematode
 Cyst Nematode
 Dagger Nematode
 Lesion Nematode
 Ring Nematode
 Root Knot Nematode
 Stem Nematode

Phylloxera, such as:
 Grape Phylloxera

Psyllids
Sawflies

Scales, such as:
 Azalea Bark Scale

Black Scale
 Brown Soft Scale
 California Red Scale
 Camellia Scale
 Coffee Scale
 Cottony-cushion Scale
 Fern Scale
 Florida Red Scale
 Green Scale
 Juniper Scale
 Pine Needle Scale
 Purple Scale
 Rose Scale
 San Jose Scale
 Sugar Pine Scale
 Tea Scale
 Wax Scale

Sowbugs (Pillbugs)

Thrips, such as:

Citrus Thrips
 Flower Thrips
 Gladiolus Thrips
 Onion Thrips
 Pear Thrips
 Thrips palmi
 Tobacco Thrips
 Western Flower Thrips

Webworms, such as:

Fall Webworms
 Sod Webworm

Whiteflies, such as:

Ash Whitefly
 Banded-wing Whitefly
 Bayberry Whitefly
 Citrus Whitefly
 Cloudy-winged Whitefly
 Greenhouse Whitefly
 Silverleaf Whitefly
 Sweetpotato Whitefly
 Variegated Whitefly
 Wolly Whitefly

CROPS ON WHICH AZATIN-XL CAN BE USED

AZATIN-XL can be used indoors and outdoors. Plants may be potted, grown in the soil or soil-less mixtures or grown hydroponically.

BEDDING PLANTS, FLOWERS, POTTED PLANTS AND FOLLIAGE, such as:

| | | |
|----------------|--------------|--------------------------|
| Actinopteris | Foxglove | Spathiphyllum |
| African Violet | Freezia | Stock |
| Aglaonema | Fuchsia | Syngonium |
| Allamanda | Gaillardia | Verbena |
| Algerian Ivy | Gardenia | Vinca |
| Alocasia | Geranium | Wandering Jew |
| Anthurium | Gerbera | Zinnia |
| Aphelandra | Gladioli | |
| Artemesia | Gloxinia | <u>ORNAMENTALS, such</u> |
| Aster | Gypsophilla | <u>as:</u> |
| Aucuba Ilex | Hedera | African Violet |
| Azalea | Hibiscus | Ageratum |
| Baby's Breath | Impatiens | Arvborvitae |
| Begonia | Iris | Aster |
| Bougainvillea | Lily | Aucuba Illex |
| Boston Fern | Manvilla | Azalea |
| Boxwood | Marigold | Begonia |
| Brachycome | Nasturtium | Boxwood |
| Cacti | Pansy | Cacti |
| Calabrese' | Pelargonium | Calendula |
| Caladium | Peony | Calla |
| Calla | Peperomia | Camella |
| Calathea | Petunia | Camellia |
| Calendula | Philodendron | Carnation |
| Carnation | Phlox | Ceanothus |
| Chrysanthemum | Photinia | Crysanthemum |
| Coleus | Pittloporum | Cineraria |
| Columbine | Pinks | Coleus |
| Dahlia | Poinsettia | Cotoneaster |
| Daisy | Pothos | Cyclamen |
| Daylily | Portulaca | Daffodil |
| Delphinium | Primrose | Dahlia |
| Dianthus | Rosemary | Delphinium |
| Dieffenbachia | Rose | Dogwood |
| Dusty Miller | Rubberplant | Ficus |
| Easter Lily | Salvia | Foliage Plants |
| English Ivy | Schefflera | Fuchsia |
| Euphoria | Sedum | Gardenia |
| Fern | Sempervivum | Geranium |
| Ficus | Snapdragon | Gloxinia |

Hyacinth
 Hydrangea
 Iris
 Ivy
 Lily
 Maidenhair Fern
 Marigold
 Narcissus
 Orchid
 Pansy
 Pelargonium
 Peony
 Phlox
 Photinia
 Pittosporum
 Poinsettia
 Pyracantha
 Rhododendron
 Rose
 Rubber Plant
 Snapdragon
 Stock
 Tulip
 Wandering Jew
 White Cedar
 White Pine
 Yew
 Yucca
 Zinnia

TREES AND SHRUBS,

such as:

Andromeda
 Arborvitae
 Ash
 Austrian Pine
 Azalea
 Beech
 Birch
 Birdnest Spruce
 Blue spruce
 Boxwood
 Butternut
 Cedar
 Chamaecyparis

Cherry
 Crabapple
 Cotoneaster
 Cyprus
 Dogwood
 Douglas fir
 Elm
 Euonymus
 Firethorn
 Forsythia
 Hackberry
 Hawthorn
 Hemlock
 Hickory
 Holly
 Honey Locust
 Horse Chestnut
 Juniper
 Larch
 Laurel
 Lilac
 Linden
 Londo Plane
 Magnolia
 Manville
 Maple
 Mimosa
 Mountain Ash
 Myrtle
 Oak
 Pachysandra
 Peach
 Pine
 Planetree
 Poplar
 Privet
 Quince
 Spruce
 Sycamore

TURFGRASS, such as:

Bentgrass
 Bermuda grass
 Bluegrass
 Annual Bluegrass
 Centipede Grass

Fescue
 Ryegrass
 Annual Ryegrass
 Perennial Ryegrass
 St. Augustine
 Wheatgrass
 Zoysia Grass

BRASSICA (Cole)

CROPS, such as:

Broccoli
 Brussels Sprouts
 Bok Choy
 Cabbage
 Chinese cabbage
 Cauliflower

BULB VEGETABLES,

such as:

Garlic
 Leek
 Onion
 Shallot

CEREAL GRAINS, such

as:

Barley
 Buckwheat
 Corn, field
 Corn, sweet
 Corn, pop
 Millet
 Oats
 Rice
 Rye
 Sorghum
 Triticale
 Wheat

CITRUS FRUITS, such as:

Calamandin
 Citrus citron
 Grapefruit
 Kumquat
 Lemon
 Limes

Mandarin (tangerine)
 Orange, sour
 Orange, sweet
 Pummelo
 Satsuma Mandarin

CUCURBIT

VEGETABLES, such as:

Balsam pear (bitter melon)
 Chinese waxgourd
 Citron Melon
 Cucumber
 Gherkin
 Gourds
 Cantaloupe
 Casaba
 Crenshaw
 Honeydew
 Honeyballs
 Mango Melon
 Pumpkin
 Squash
 Watermelon

FIBER CROPS, such as:

Cotton
 Flax
 Kenaf

FORAGE AND FODDER

CROPS, such as:

Alfalfa
 Annual Ryegrass
 Bermuda Grass
 Bluegrass
 Clover
 Fescue
 Hay (Mixed)
 Kudzu
 Lespedeaz
 Lupine
 Orchard grass
 Pasture (Mixed)
 Perennial Ryegrass
 Redtop
 Sainfoin

Timothy
 Trefoil
 Vetches
 Wheatgrasses

FRUITING

VEGETABLES, such as:

Eggplant
 Ground Cherry
 Pepinos
 Peppers
 Tomatillo
 Tomato

HERBS AND SPICES,

such as:

Anise
 Balm
 Basil
 Borage
 Burnnet
 Camomile
 Caraway
 Catnip
 Chives
 Celery
 Coriander
 Costmary
 Cumin
 Curry Leaf
 Dandelion
 Dill
 Fennel
 Fenugreek
 Horehound
 Hyssop
 Mint
 Marigold
 Marjoram
 Nasturtium
 Pennyroyal
 Rosemary
 Rue
 Sage
 Savory
 Sweet Bay

Tansy
 Tarragon
 Thyme
 Wintergreen
 Woodruff
 Wormwood

LEAFY VEGETABLES,

such as:

Chinese Spinach
 Celery
 Chervil
 Collards
 Corn salad
 Chrysanthemum (edible)
 Cress
 Endive
 Fennel
 Kale
 Kohlrabi
 Lettuce
 Mustard Greens
 Orach
 Parsley
 Rhubarb
 Spinach
 Swiss Chard
 Turnip tops

LEGUMINOUS CROPS,

such as:

Beans (Phaseolus, Lupinus,
 Vicia, Vigna spp)
 Chick Peas (garbanzos)
 Lentil
 Peas (Pisum spp)
 Soybeans

NUTS, such as:

Almond
 Beech nut
 Brazil nut
 Butternut
 Cashew
 Chestnut
 Chinquapin

Filberts (hazelnuts)
 Hickory Nuts
 Lychee
 Macadamia
 Pecan
 Pistachio
 Walnuts

OIL SEED CROPS, such

as:

Canola
 Castors
 Crambe
 Guar
 Jojoba
 Peanuts
 Rape
 Safflower
 Sesame
 Soybean
 Sunflower

POME FRUITS, such as:

Apple
 Crabapple
 Loquat
 Mayhaws
 Pear
 Quince
 Jujube

ROOT AND TUBER
 CROPS, such as:

Beet, red
 Beet, sugar
 Carrot
 Cassava
 Celeriac
 Chervil
 Dasheen (taro)
 Ginger
 Horseradish
 Jicama
 Parsnips
 Potato
 Radish

Radish, Japanese (Daikon)
 Rutabaga
 Salisfy
 Sweet potato
 Tumeric
 Turnip
 Yam
 Yam Bean

STONE FRUITS, such as:

Apricot
 Cherry, sour
 Cherry, sweet
 Nectarine
 Peach
 Plum
 Prune

SMALL FRUITS AND

BERRIES, such as:

Blackberry
 Blueberry
 Boysenberry
 Cranberry
 Current Dew Berry
 Elderberry
 Gooseberry
 Grape
 Huckleberry
 Loganberry
 Olives
 Olallie, berry
 Raspberry
 Strawberry
 Youngberry

TROPICAL FRUITS, such

as:

Abiu
 Atemoya
 Breadfruit
 Banana
 Cherimoya
 Durian
 Guava
 Longan

Malanga
 Mango
 Mangosteen
 Papaya
 Passion Fruit
 Plantain
 Rambutan
 Starfruit

MISCELLANEOUS

CROPS, such as:

Artichoke
 Asparagus
 Avocados
 Birdseed
 Cardone
 Coffee
 Cacao
 Edible flowers
 Feijoa
 Figs
 Hops
 Guayule
 Kiwi
 Mushrooms
 Agaricus
 Oyster
 Chitake
 Okra
 Palm
 Papaya
 Pawpaw
 Persimmon
 Pineapple
 Sugar Cane
 Tamarillo
 Tea
 Tobacco
 Waterchesnut
 Watercress

NON-CROP AREAS
 RANGELAND
 BARRIER STRIPS
 RIGHTS OF WAY
 WASTELANDS.

Important Note: This product has been evaluated for phytotoxicity on a wide range of crops. However, since all combinations or sequences of pesticide sprays including fertilizers, surfactants and adjuvants have not been tested, spray a small area first to make certain that no phytotoxicity occurs.

PREHARVEST INTERVAL

There are no restrictions on applying this product up to the time of harvest. Individual state regulations may vary and should be consulted for allowable pre-harvest interval.

MODE OF ACTION:

This product controls targeted insect larvae when they ingest or come in contact with it, by interfering with the insect's ability to molt. It is effective on all larval stages and pupae. It also reduces crop damage by repelling and deterring feeding of all stages of insects.

GENERAL APPLICATION DIRECTIONS

READ ALL DIRECTIONS BEFORE USING.

Dilute AZATIN XL in water at a rate up to 21 fluid ounces (20 grams active ingredient) per acre. Apply using any suitable ground or aerial equipment, in a manner to obtain uniform and complete plant coverage. For agronomic crops apply using conventional application equipment in a minimum of 30 gallons of water per acre and aerial application equipment in a minimum of 3 gallons of water per acre. Avoid over-spraying to the point of excessive runoff. The maximum application rate is 20 grams of active ingredient or less per acre according to the tolerance exemption (40 CFR 180.1119). Refer to tables for detailed dilution rates.

Application Rates for Whitefly and Other Greenhouse (Including Lathe and Shade), Nursery and Interiorscape Pests

Apply AZATIN XL at the dilution rate in 100 gallons of water to assure adequate plant coverage (use 1-2 gallons of spray solution/1,000 sq. feet).

| Pests Controlled by Azatin XL | Rate of Azatin XL per 100 gallons water | Remarks |
|--|--|---|
| Sweetpotato Whitefly (including strain B) | 10 to 16 fl. oz. | Foliar application to larvae and nymphs. |
| Greenhouse Whitefly | 10 to 16 fl. oz. | Foliar application to larvae and nymphs. |
| Fungus Gnats | 8 fl. oz. | Apply as soil drench for maggot control. |
| Western Flower Thrips | 12 to 16 fl. oz. | Suppression of larvae and adult feeding Deterrence. |
| Aphids | 12 to 16 fl. oz. | Suppression and adult feeding deterrence. |
| Leafminers | 10 to 16 fl. oz. | Foliar application to larvae. |
| Armyworms | 10 to 16 fl. oz. | Foliar application to larvae. |
| Others | | |
| Bagworms | 10 to 16 fl. oz. | Foliar application to nymphs/larvae. |
| Borers | | |
| Budworms | | |
| Cankerworms | | |
| Cutworms | | |
| Gypsy Moths | | |
| Leafhoppers | | |
| Leafrollers | | |
| Sawflies | | |
| Tent Caterpillars | | |
| Webworms | | |
| Black Vine Weevil | 21 fl. oz./acre | Soil and foliar application to larvae. |
| Mushroom Fly | 21 fl. oz./acre | Apply as soil drench for maggot control. |

* Rate per acre.

Application Rates for Key Insect Pests in Vegetables, Fruits, Nuts and Agronomic Crops

Apply AZATIN XL at the application rates in sufficient water to assure adequate coverage.
(Conventional application equipment apply in a minimum of 30 gallons water per acre)
(Aerial application equipment apply in a minimum of 3 gallons water per acre)

| Pests controlled by Azatin XL | Rate Azatin XL per Acre* | Remarks |
|--------------------------------|-----------------------------|---|
| Aphids, such as: | | |
| Cotton Aphid | 10 to 16 fl. oz. | Foliar application, for suppression only |
| Greenpeach Aphid | 10 to 16 fl. oz. | |
| Hop Aphid | 10 to 16 fl. oz. | |
| Potato Aphid | 10 to 16 fl. oz. | |
| Armyworms, such as: | | |
| Beet Armyworm | 5 to 16 fl. oz. | Foliar application to larvae |
| Fall Armyworm | 5 to 16 fl. oz. | |
| Southern Armyworm | 5 to 16 fl. oz. | |
| Yellow Stripe Armyworm | 5 to 16 fl. oz. | |
| Beetles, such as: | | |
| Colorado Potato Beetle | 5 to 16 fl. oz. | Foliar application to larvae |
| Borers, such as: | | |
| Peachtwig Borer | 5 to 16 fl. oz. | Foliar application to larvae |
| Corn Earworm | 10 to 21 fl. oz. | |
| Caterpillars, such as: | | |
| Artichoke Plume Moth | 16 to 21 fl. oz. | Foliar application to larvae |
| Cabbage Butterfly | 10 to 21 fl. oz. | |
| Corn Earworm | 10 to 21 fl. oz. | |
| Diamondback Moth | 10 to 16 fl. oz. | |
| Fruitree Leafroller | 5 to 16 fl. oz. | |
| Grape Leafroller | 5 to 16 fl. oz. | |
| Hickory Shuck Worm | 10 to 21 fl. oz. | |
| Imported Cabbage Worm | 5 to 16 fl. oz. | |
| Navel Orangeworm | 10 to 21 fl. oz. | |
| Omnivorous Leafroller | 5 to 16 fl. oz. | |
| Tobacco Budworm | 5 to 16 fl. oz. | |
| Tobacco Hornworm | 5 to 16 fl. oz. | |
| Tomato Fruitworm | 5 to 16 fl. oz. | |
| Western Grapeleaf Skeletonizer | 5 to 16 fl. oz. | |
| Cutworms, such as: | | |
| Citrus Cutworm | 5 to 16 fl. oz. | Foliar application to larvae |
| Blackworm Cutworm | 5 to 10 fl. oz. | |
| Variegated Cutworm | 5 to 10 fl. oz. | |
| Loopers, such as: | | |
| Cabbage Looper | 5 to 10 fl. oz. | Foliar application to larvae |
| Soybean Looper | 5 to 10 fl. oz. | |
| Leafminers, such as: | | |
| Citrus Leafminer | 10 to 16 fl. oz. | Foliar application to larvae. Use with Oil. |
| Serpentine Leafminer | 10 to 16 fl. oz. | |
| Vegetable Leafminer | 10 to 16 fl. oz. | |

Application Rates for Key Insect Pests in Vegetables, Fruits, Nuts and Agronomic Crops (cont.)

Apply AZATIN XL at the application rates in sufficient water to assure adequate coverage
(Conventional application equipment apply in a minimum of 30 gallons water per acre)
(Aerial application equipment apply in a minimum of 3 gallons water per acre)

| Pests controlled by Azatin XL | Rate Azatin XL per Acre* | Remarks |
|-------------------------------|-----------------------------|--|
| Leafhoppers, such as: | | |
| Grape Leafhopper | 10 to 16 fl. oz. | Foliar application to nymphs. Use Equipment to target the underside of Leaves. |
| Variegated Leafhopper | 10 to 16 fl. oz. | |
| Scales, such as: | | |
| Coffee Scale | 10 to 16 fl. oz. | Foliar Application |
| Whiteflies, such as: | | |
| Greenhouse Whitefly | 10 to 21 fl. oz. | Foliar application to nymphs. Use Equipment to target undersides of leaves. |
| Sweet Potato Whitefly | 10 to 21 fl. oz. | |
| Silverleaf Whitefly | 10 to 21 fl. oz. | |

*When using lower rates (less than 10 fl. oz.), combine Azatin-XL with an approved adjuvant such as a non-phytotoxic crop oil, up to 1%. Always ensure good coverage by adjusting spray gallonage. Treat early for best control. Do NOT use less than 10 fl. oz. In California.

Make applications when pests first appear and are in their early larval stages. Repeat applications every 7 days or as needed.

For best results, add a spreader-sticker at the label rate.

Maintain dilute solutions containing Azatin®-XL at a pH between 3 and 7, and apply soon after preparation. Do not store for later use.

This product may be pre-mixed in a supply tank with water, fertilizer or other appropriate agricultural chemicals. Agitation is necessary (See Mixing Directions). Crop injury or lack of effectiveness can result if uniform distribution is not achieved.

When pest populations are high, use the higher label rates.

SPRAY:

High Volume-When plant foliage is dense, use the higher label rates and increase spray gallonage to obtain uniform and complete coverage.

Aerial/Low/ultra low volume-Apply Azatin®-XL at rates of 5 to 21 fl. oz./acre (10-21 fl. oz. in California) in a minimum of 3 gallons of water per acre. For best results, ensure uniform and complete plant coverage.

DRENCH/CHEMIGATION:

This product is effective as a soil drench for controlling soil-borne insect larvae (e.g. Fungus Gnats).

It is also effective as a soil drench for controlling foliar and soil-borne pests, particularly when alternated with Azatin®-XL foliar sprays.

Apply Azatin®-XL in sufficient water and for sufficient duration so as to distribute the application rate evenly to the entire treated area.

Apply to moderately moist soils. Use volumes that thoroughly wet the soil, but do not cause significant surface runoff or excessive drip from pots.

CHEMIGATION:

Refer to supplemental labeling entitled "Certis's Chemigation Bulletin" for use directions for chemigation. Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed.

TURFGRASS:**Use Directions**

Always apply Azatin®-XL as a spray in sufficient water to assure thorough coverage of the foliage or soil, depending on the type of application.

Equipment – Use suitable ground or aerial equipment that allows for uniform coverage of the targeted treatment area, such as hand or power-operated spray equipment, or hose-end application.

Application – For surface feeders – For control of armyworms, sod webworms, (*Crambus* spp) cutworms, and leafhoppers in turfgrass, apply Azatin®-XL at a rate up to 21 fluid ounces (0.5 fl. oz./1,000 sq. ft.) per acre. Use the higher label rates for moderate to heavy insect infestations.

Subsurface feeders – For control of white grubs, chinch bugs, and billbugs in turfgrass: Apply at a rate up to 21 fl. oz./acre (0.5 fl. oz./1,000 sq. ft.) per application. Sprinkle irrigate with 1 to 2 inches of water following treatment. Repeat application as needed.

Irrigate well before applying. Repeat application as needed. Use up to 5 gallons of water per 1,000 square feet (43 to 218 gallons/A) to obtain good coverage. For all applications use sufficient water rate to obtain thorough uniform coverage.

Alternative turf use directions (a):

Always apply this product as a spray in sufficient water to assure thorough coverage of the foliage depending on the type of application.

Equipment – Use suitable ground equipment that allows for uniform coverage of the targeted treatment area, such as hand-operated spray equipment, or hose-end applicators.

Application – For surface feeder – For control of armyworms, sod webworms, (Crambuse spp) cutworms, and leafhoppers in turfgrass, apply at a rate of 10-21 fluid ounces (0.25 – 0.5 fl. oz/1,000sq. ft.) per acre. Use the higher label rates for moderate to heavy insect infestation.

Alternate turf use directions (b):

Dilute this product in water at a rate of 10 to 20 fluid ounces/100 gallons. Repeat application every 7 days or as needed.

Always apply product as a spray in sufficient water to assure thorough coverage of the foliage or soil depending on the type of application.

SPRAY EQUIPMENT

Use suitable equipment that allows for uniform coverage of the targeted treatment area, such as hand or power-operated spray equipment.

APPLICATIONS: Surface feeders: For control of armyworms, cutworms, and sod webworms in turfgrass: Apply at a rate of 10 to 20 fluid ounces (0.25 to 0.5 fluid ounces per 1,000 square feet) per acre. Use the higher label rates for moderate to heavy infestations. Use 1-5 gallons of water per 1,000 square feet (43 to 218 gallons/A) to obtain good coverage. Irrigate well before applying. For all applications use sufficient water to obtain thorough uniform coverage.

MIXING DIRECTIONS

AZATIN®-XL WITH WATER:

For best results,

1. Use clean equipment.
2. Fill tank $\frac{1}{2}$ full to $\frac{3}{4}$ full with water and begin agitation.
3. Add pesticide to the tank.
4. Fill the tank completely with water and mix thoroughly before applying.
5. Adjust spray solution to between 3 to 7 pH, if necessary.
6. Apply pesticide mix immediately after mixing.
7. If the mixture is not applied immediately, agitate before application.
8. Thoroughly clean equipment following application.

TANK MIXTURES OR FLUID FERTILIZERS:

1. Before using this product in a tank mix with fertilizer or registered pesticide, determine compatibility by conducting a compatibility test with a small amount of each product.
2. Observe all cautions and limitations on labels of all products used in combination.

3. Follow all tank mix directions and observe limitations listed in the combination product(s) label.

COMPATIBILITY TEST

Perform a compatibility test before tank mixing this product with other product(s) or liquid fertilizer(s). Fill three separate 1 quart jars with 1 pint of water and fertilizer. To a first jar add this product and mix well. To a second jar, add the desired other tank mix product(s) and mix well. To a third jar, combine this product with the other tank mix product(s) and mix well. If more than one product is used, add them separately with dry formulations first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix. For the appropriate amount of product for this test use the following:

DRY PRODUCTS-For each pound to be applied per acre, add 1.5 level teaspoons to each jar.

LIQUID PRODUCTS-For each pint to be applied per acre, add 0.5 teaspoons or 2.5 ml to each jar.

Note any differences between the mixtures in the jars (compounds alone vs. mixtures) after 15 min. Look for evidence of physical incompatibility such as clumping, precipitation, oily residues on the sides of the glass or other signs of incompatibility. If either mixture separates, but can be readily re-mixed, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, do not use the mixture. For additional mixing information or assistance call Certis's Customer Service at (800) 250-5024.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Do not store above 100 degrees F or below -20 degrees F for extended periods of time. Keep containers tightly closed when not in use.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

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

WARRANTY

Certis USA, L.L.C. warrants that the material contained herein conforms to the description on the label and is reasonably fit for the purposes referred to in the directions for use. Timing and method of application, weather, watering practices, nature of soil, the insect problem, condition of the crop, incompatibility with other chemicals not specifically recommended, and other influencing factors in the use of this product are beyond the control of the seller. Buyer assumes all risks of use, storage or handling of this material not in strict accordance with directions given herein. **NO OTHER EXPRESS OR IMPLIED WARRANTY OF THE FITNESS OR MERCHANTABILITY IS MADE**

Chemigation Bulletin

GENERAL INFORMATION:

Apply this product only through drip (trickle); sprinkler (solid set, lateral move, end tow, side-roll, center pivot, or hand move); flood (basin); furrow; or border irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

If you have questions about calibration, contact State Extension Service specialists, 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.

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, backflow preventer (RPZ) 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.

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.

DRIP TRICKLE CHEMIGATION:

1. 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. 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.
6. Systems must use a metering pump such as a positive displacement injection pump (i.e., diaphragm pump) effectively designed and constructed of materials that are

compatible with pesticides and capable of being fitted with a system interlock.

7. Dilute the product in water following the label mixing directions. It may be premixed in a supply tank with water, fertilizer, or other appropriate tank-mixed agricultural chemicals. Agitation is necessary. Apply to moderately moist soils. Use volumes that thoroughly wet the soil but that do not cause significant runoff or excessive drip from pots. Application should be continuous in sufficient water to apply the recommended rate evenly to the entire treated area.

SPRINKLER CHEMIGATION:

1. 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.
2. The pesticide injection pipeline must also contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide

- such as a positive displacement injection pump (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Dilute the product in water following the label mixing directions. It may be premixed in a supply tank with water, fertilizer or other appropriate tank-mixed agricultural chemicals. Agitation is necessary. Apply when soils are moderately moist. Use volumes that thoroughly wet the foliage and/or soil but that do not cause significant runoff or excessive drip from pots. Application should be continuous in sufficient water to apply the recommended rate evenly to the entire treated area.
 8. Do not apply when wind speed favors drift beyond the area intended for treatment.

FLOOD (BASIN), FURROW AND BORDER CHEMIGATION:

1. Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential of water source

- irrigation pipeline to prevent water source contamination from backflow.
- b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
 - c. 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.
 - d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
 - e. 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.
 - f. Systems must use a metering pump, such as a positive displacement injection pump (i.e., diaphragm pump) effectively designed and

constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

3. Dilute the product in water following the label mixing directions. It may be premixed in a supply tank with water, fertilizer, or other appropriate tank-mixed agricultural chemicals. Agitation is necessary. Apply to moderately moist soils. Use volumes that thoroughly wet the soil but that do not cause significant runoff. Application should be continuous in sufficient water to apply the recommended rate evenly to the entire treated area.

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