

Azatin[®]XL Plus

INSECT GROWTH REGULATOR

For indoor and outdoor use on Ornamentals,
Agronomic and Horticultural Crops.

ACTIVE INGREDIENT:

Azadirachtin*3.0%

OTHER INGREDIENTS.....97.0%

TOTAL100.0%

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

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

Net Contents:

EPA Reg. No. 70051-27
EPA Est. No. 44616-MO-01

Manufactured by
Certis USA, L.L.C.
9145 Guilford Road
Suite 175
Columbia, MD 21046

CERTIS

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.

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 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.

(continued next page)

AGRICULTURAL USE REQUIREMENTS (continued)

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

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.

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.

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.

PESTS CONTROLLED BY AZATIN-XL PLUS**Aphids, such as:**

Cotton Aphid
Green Peach Aphid

Armyworms, such as:

Beet Armyworm
Fall Armyworm
Southern Armyworm
Yellowstriped Armyworm

Beetles, Grubs, and Weevils, such as:

Black Vine Weevil
Colorado Potato Beetle
Japanese Beetle
Strawberry Weevil
Twig Girdlers

Borers, such as:

Azalea Stem Borer
Peachtree Borer
Peach Twig Borer

Caterpillars and Loopers, such as:

Cabbage Looper
Diamondback Moth
Imported Cabbageworm
Navel Orangeworm
Soybean Looper
Tobacco Budworm

Tobacco Hornworm
Tomato Fruitworm
Grapeleaf Skeletonizer

Cutworms, such as:

Black Cutworm
Citrus Cutworm

Flies, such as:

Caribbean Fruit Fly
Fungus Gnat
Mushroom Fly
Mediterranean Fruit Fly
Phorid Fly

Leafhoppers, such as:

Grape Leafhopper
Potato Leafhopper
Variegated Leafhopper

Leafminers, such as:

Holly Leafminer
Serpentine Leafminer
Vegetable Leafminer

Leafrollers, such as:

Blueberry Leafroller
Grape Leafroller
Filbert Leafroller
Fruittree Leafroller
Oblique Banded Leafroller

PESTS CONTROLLED BY AZATIN-XL PLUS (continued)

Omnivorous Leafroller

San Jose Scale

Moths, such as:

Artichoke Plume Moth
Codling Moth

Psyllids**Scales, such as:**

Black Scale
California Red Scale
Coffee Scale
Green Scale

Thrips, such as:

Thrips Palmi

Whiteflies, such as:

Greenhouse Whitefly
Silverleaf Whitefly
Sweet Potato Whitefly

CROPS ON WHICH AZATIN-XL PLUS CAN BE USED

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

Brassica (Cole)**Crops, such as:**

bok choy
broccoli
Brussels sprouts
cabbage
cauliflower
Chinese cabbage

chives
coriander
costmary
cumin
curry leaf
dandelion
dill

Bulb Vegetables, such as:

garlic
leek
onion
shallot

fennel
fenugreek
horehound
hyssop
mint
marigold
marjoram

Citrus Fruits, such as:

citrus citron
grapefruit
lemon
limes
mandarin (tangerine)
orange, sour
orange, sweet

nasturtium
pennyroyal
rosemary
rue
sage
savory
sweet bay
tansy
tarragon
thyme
wintergreen
woodruff
wormwood

Cucurbit Vegetables, such as:

bittermelon
cantaloupe
crenshaw
cucumber
gourds
honeydew
pumpkin
squash
watermelon

Leafy Vegetables, such as:

celery
Chinese spinach
collards
endive
kale
kohlrabi
lettuce
mustard greens
parsley
rhubarb
spinach
Swiss chard

Fruiting Vegetables, such as:

eggplant
peppers
tomato

Forage and Fodder Crops, such as:

alfalfa
Bermuda grass
timothy grass
vetches
wheatgrasses

Leguminous Crops, such as:

beans
(Phaseolus, Lupinus, Vicia, Vigna spp)
peas (Pisum spp)

Herbs and Spices, such as:

anise
balm
basil
borage
burnet
chamomile
caraway
catnip
celery

Nuts, such as:

almond
cashews
lychee
macadamia
pecan
pistachio
walnuts

CROPS ON WHICH AZATIN-XL PLUS CAN BE USED

(continued)

Root and Tuber Vegetables, such as: beet, red beet, sugar carrot cassava chervil dasheen (taro) ginger Japanese radish (daikon) parsnips potato radish sweet potato turnip yam	Tropical Fruits, such as: abiu banana breadfruit cherimoya durian guava longan malanga mango mangosteen papaya passion fruit plantain starfruit
Small Fruits and Berries, such as: blackberry blueberry boysenberry cranberry currant dewberry elderberry gooseberry grape huckleberry loganberry olives olallie berry raspberry strawberry youngberry	Miscellaneous Crops, such as: artichoke asparagus avocado birdseed cacao coffee edible flowers feijoa figs hops guayule kiwi mushrooms agaricus oyster shitake papaya okra palm pawpaw persimmon pineapple sugarcane tamarillo tea tobacco water chestnut
Stone Fruits, such as: apricot cherry, sour cherry, sweet nectarine peach plum prune	

GENERAL APPLICATION DIRECTIONS READ ALL DIRECTIONS BEFORE USING.

- Dilute Azatin-XL Plus 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 overspraying 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 table for detailed dilution rates.
- 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 Plus 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 Plus at rates of 5 to 21 fl. oz./acre (10 to 20 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 Plus foliar sprays.
- Apply Azatin-XL Plus 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.

MIXING DIRECTIONS

AZATIN-XL PLUS WITH WATER:

For best results:

1. Use clean equipment.
2. Fill tank 1/2 full to 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 and 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 minutes. 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 remixed, 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.

AZATIN-XL PLUS

Application Rates for Whitefly and other Greenhouse, (including lath and shade), Nursery and Interiorscape Pests.

Apply Azatin-XL Plus 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 Plus	Rate of Azatin-XL Plus per 100 gallons water	Remarks
Sweet Potato Whitefly	10 to 16 fl.oz.	Foliar application to larvae and nymphs
Silverleaf Whitefly	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
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 Borers Cankerworms Leafhoppers Leafrollers	10 to 16 fl. oz.	Foliar application to nymphs / larvae
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.

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.

CERTIS'S 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 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 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 contamination from the backflow if water flow stops.
2. Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:
 - a. 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.
 - 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.