

ECOZIN™ 3% EC **BOTANICAL INSECTICIDE**

FOR USE ON OUTDOOR FOOD CROPS

For Controlling and Repelling Insects such as Aphids, Armyworms, Beetles, Budworms, Cutworms, Leafhoppers, Leafminers, Leafrollers, Lepidopterous Larvae, Loopers, Scales, Weevils, Whiteflies, and Other Insects as listed.

ACTIVE INGREDIENT:	By Wt.
Azadirachtin	3.0%
INERT INGREDIENTS:	97.0%
TOTAL	100.0%

Contains 0.27 lb. (121 grams) of azadirachtin per gallon.

KEEP OUT OF REACH OF CHILDREN **WARNING $\frac{3}{4}$ 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.)

FIRST AID

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention. **IF ON SKIN:** Wash with plenty of soap and water. Get medical attention.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

WARNING: Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear long-sleeved shirt and long pants, socks and shoes, and goggles or face shield. 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; chemical-resistant gloves (such as barrier laminate, butyl, nitrile, neoprene, polyvinyl chloride, or viton); goggles or face shield; and socks and shoes.

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. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

User Safety Recommendations

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when cleaning equipment or disposing of equipment wash waters.

This product is toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product if bees are visiting the treatment area.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Do not apply this product through any irrigation system unless the chemigation instructions on this label are followed. 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 and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS).

Do not enter or allow 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 over long-sleeved shirt and long pants; goggles or face shield; waterproof gloves, and socks and chemical-resistant footwear.

PRODUCT DESCRIPTION

ECOZIN 3% EC is an emulsifiable concentrate containing 3.0% by weight azadirachtin. It has been evaluated on a wide variety of ornamental, forestry, and food crops. No phytotoxicity has been observed at recommended field rates. ECOZIN 3% EC is an insect growth regulator and does not control adult insects. However, ECOZIN 3% EC is effective as a repellent towards some adult species as detailed below. ECOZIN 3% EC is an effective resistance management tool when used in an Integrated Pest Management (IPM) spray program.

Mode of Action

ECOZIN 3% EC controls insects in the larval, pupal, and nymphal stages by interfering with the metabolism of ecdysone. Insects typically die between larval to larval, larval to pupal, nymph to nymph molts, or during adult eclosion.

Compatibility

ECOZIN 3% EC has been found to be compatible with the most commonly used insecticides, fungicides and fertilizers. Compatibility should be checked by using the correct proportion of the products in a small test container. Growers should then test the tank-mix combinations for possible adverse effects (such as settling out, flocculation, etc.) and for phytotoxic effects on a small sample of plants prior to use. As environmental conditions can alter the interactions between compounds, a compatibility test is recommended for both new and previously used combinations. Avoid mixtures of several materials and very concentrated spray mixtures.

Do not use ECOZIN 3% EC with Bordeaux mixture, triphenyltin hydroxide, lime sulfur, Rayplex iron or other highly alkaline materials. Use mildly alkaline mixtures immediately after mixing to prevent loss of insecticidal activity. When using in combination with other products, use ECOZIN 3% EC either at, or half the rate, specified in the Use Rates Recommendations in Table 1. Follow the directions for use, precautions and limitations for use on all of the product labels used in the combination. Some suggested tank mix combinations are as follows:

ECOZIN 3% EC plus non-phytotoxic crop oil*
ECOZIN 3% EC plus chlorpyrifos*
ECOZIN 3% EC plus acephate*
ECOZIN 3% EC plus *Bacillus thuringiensis** (BT)
ECOZIN 3% EC plus bifenthrin*
ECOZIN 3% EC plus esfenvalerate*
ECOZIN 3% EC plus abamectin*

* Always follow the manufacturer's Directions for Use and Precautionary Statements.

APPLICATION INSTRUCTIONS

Read all directions and precautions before use. ECOZIN 3% EC is exempt from tolerances and may be applied as directed to any food or non-food crop up to and including the day of harvest at a rate not exceeding 22.5 oz. (20 grams active ingredient) per acre per application.

Mixing

SHAKE WELL BEFORE MIXING. Always use this product promptly after mixing with water. ECOZIN 3% EC will break down in the spray solution if not used within 8 hours. Never allow tank mix to stand overnight. ECOZIN 3% EC will break down in spray tank mixtures that have pH values exceeding 7.0. The recommended pH range is between 5.5 and 6.5. For optimum performance, a buffering agent may be used. When mixing with other approved agrichemicals, always ensure proper agitation in the spray tank to ensure uniform application.

Using the use rates in the Use Rates Recommendations Table, determine the amount of ECOZIN 3% EC required for the number of acres to be treated. To a clean spray tank, add at least one-half the water to be sprayed. Begin agitation and add the determined amount of ECOZIN 3% EC. Add the remaining water and continue agitation.

ECOZIN 3% EC disperses freely when added to water. Always use clean equipment. For uniform distribution on plant canopy and proper dilution, always ensure proper agitation in mixing tanks or vessels. When mixing with other agrichemicals, add solid constituents (such as wettable powders, water dispersible granules or micronutrients) last in the form of a slurry.

Application Method and Equipment

ECOZIN 3% EC can be applied as a foliar spray or a drench to soil or non-soil media to control insects. When needed, soil drenches can also be used to control soil-borne pests, including soil-borne larvae of foliar insect pests. When applying as a drench, avoid excessive leaching.

ECOZIN 3% EC can also be applied through sub-surface soil treatment equipment. Always follow equipment manufacturers use directions.

ECOZIN 3% EC may be applied using any powered or manual pesticide application equipment which includes, but is not restricted to, high-volume, low-volume, ultra-low volume, electrostatic, fogging, and chemigation. Follow the original manufacturer's recommendations when using these types of equipment.

For optimum results, 2 applications made at 7 to 10 day intervals are recommended unless otherwise specified. Foliar applications should be made to both sides of leaves. In addition, a surfactant when used according to manufacturer's recommendations may improve product performance. The addition of a non-phytotoxic crop oil at rates not exceeding 1.0% (volume/volume) generally enhances insect control.

RECOMMENDED USES AND RATES

ECOZIN 3% EC is intended for use on outdoor food crops to control the insects listed in the Use Rates Recommendations in Table 1. ECOZIN 3% EC can be used on food crops including:

Berries such as: blackberries, blueberries, caneberries, cranberries, currants, elderberries, gooseberries, huckleberries, loganberries, raspberries, strawberries, youngberries.

Bulb Vegetables such as: garlic, leeks, onions, shallots.

Cereal Grains such as: barley, buckwheat, corn, millet, oat, popcorn, rice, rye, sorghum, teosinte, triticale hybrids, wheat, wild rice.

Citrus Fruits such as: calamondins, citrus citrons, citrus hybrids, grapefruits, kumquats, lemons, limes, mandarins, oranges, pummelos, Satsuma mandarins.

Cucurbit Vegetables such as: bittermelons, chayotes, Chinese waxgourds, citron melons, cucumbers, gherkins, gourds, muskmelons (such as cantaloupe, casaba, Crenshaw, honeydew), pumpkins, squash, watermelons.

Fruiting Vegetables such as: eggplants, groundcherries, pepinos, peppers, pimentos, tomatillos, tomatoes.

Herbs and Spices including but not limited to: allspice, angelica, anise, annatto, balm, basil, borage, burnet, chamomile, caper buds, caraway, cardamom, cassia, catnip, celery seeds, chervil (dried), chives, cinnamon, clary, cloves, coriander (cilantro), costmary, cumin, curry leaf, dill, fennel, fenugreek, grains of paradise, horehound, hyssop, juniperberry, lavender, lemongrass, lovage, mace, marigold, marjoram, mustard seed, nasturtium, nutmeg, parsley, pennyroyal, pepper (black & white), poppy seeds, rosemary, rue, saffron, sage, savory, sweet bay (bay leaf), tansy, tarragon, thyme, vanilla, wintergreen, woodruff, wormwood.

Leafy Vegetables such as: amaranth, brassica (cole), broccoli, brussels sprouts, cabbage, cauliflower, celery, chervil, Chinese cabbage, collard, cress, endive, fennel, kale, kohlrabi, lettuce, mizuna, mustard greens, parsley, purslane, rape greens, rhubarb, spinach, Swiss Chard.

Legume Vegetables such as: beans (field, kidney, etc.), chickpeas (garbanzo), cowpeas, guar, jackbeans, lablab beans, lentils, peas, pigeon peas, soybeans, sword beans.

Miscellaneous Food Crops such as: asparagus, avocados, birdseed, cacao, coffee, edible flowers, feijoa, figs, grapes, guayabe, hops, kiwis, okras, olives, palms, papayas, pawpaws, persimmons, rambutans, sugarcane, tamarillos, tea, tobacco, water chestnuts, watercress.

Nuts such as: almonds, beech nuts, Brazil nuts, butternuts, cashews, chestnuts, chinquapins, filberts (hazelnuts), hickory nuts, lychee nuts, macadamia nuts, pecans, pistachios, walnuts.

Oilseed Crops such as: canola, castor, crambe, guar, jojoba, peanut, rape seed, safflower, sesame, soybean, sunflower.

Pome Fruits such as: apples, crabapples, loquats, mayhaws, oriental pears, pears, quinces.

Root and Tuber Vegetables such as: beets, carrots, ginger, ginseng, horseradish, potatoes, radishes, rutabagas, sweet potatoes, turmeric, turnips, yams.

Stone Fruits such as: apricots, cherries, nectarines, peaches, plums, prunes.

Tropical Fruits such as: atemoyas, bananas, breadfruits, cherimoyas, durians, guavas, malangas, mangos, papayas, passionfruits, pineapples, starfruits.

Refer to Use Rates Recommendations in Table 1 to determine the appropriate use rate for your site/pest combination. Rates are provided in ounces of ECOZIN 3% EC per acre. When infestation is heavy or when plant canopy is dense, ECOZIN 3% EC may be used at a rate up to twice (2x) that shown in Use Rates Recommendations Table, but not to exceed 22.5 oz/acre. When combining with other insecticides, use half the recommended rate of ECOZIN 3% EC.

TABLE 1		
PEST	RATE ¹ (oz/acre)	RECOMMENDATIONS
APHIDS (such as Cotton aphids, Green peach aphids, Pea aphids, Potato aphids)	10	Spray when pests first appear. Repeat application after 7-10 days. Use in combination with 0.25-1.0% non-phytotoxic crop oil in sufficient water to cover undersides of leaves.
BEETLES (such as Blueberry Flea beetles, Colorado Potato beetles, Flea beetles, Japanese beetles, Leaf beetles, Mexican Bean beetles, Pepper weevils, Twig girdlers)	8	Spray when pests first appear. Repeat application after 7-10 days. Use in combination with 0.25-1.0% non-phytotoxic crop oil in sufficient water.
BORERS (such as Cranberry borers, Peachtree borers, Peach Twig borers)	10	Spray soon after egg hatch. Use in combination with 0.25-1.0% non-phytotoxic crop oil in sufficient water.
BUGS (such as Lygus bugs, Stink bugs)	10	Spray nymphs early.
CATERPILLARS (such as Armyworms, Artichoke Plume moths, Bagworms, Bollworms, Budworms, Cabbage butterflies, Cabbage Loopers, Caseworms, Corn earworms, Cutworms, Diamond Back moths, Fireworms, Fruitworms, Grapeleaf skeletonizers, Hickory shuckworms, Hornworms, Imported Cabbage worms, Leaf perforators, Leafrollers, Melonworms, Navel Orange worms, Oblique-banded leafrollers, Omnivorous leafrollers, Oriental fruit moths, Pickleworms, Pinworms, Red-banded leafrollers, Soybean loopers, Tent caterpillars, Tobacco budworms)	8	Spray when pests first appear. Repeat application after 7-10 days. Use in combination with 0.25-1.0% non-phytotoxic crop oil in sufficient water.
FLIES (such as Blueberry maggots, Cherry maggots, Fruit flies, Midges, Onion maggots, Walnut Husk flies)	10	Spray when pests first appear.
LEAFHOPPERS	8	Spray when pests first appear. Repeat application after 7-10 days. Use in combination with 0.25-1.0% non-phytotoxic crop oil in sufficient water to cover undersides of leaves.
LEAFMINERS (such as Citrus leafminers, Serpentine leafminers, Vegetable leafminers)	10	Use in combination with 0.25-1.0% non-phytotoxic crop oil in sufficient water to cover undersides of leaves.
MEALY BUGS (such as Citrus mealy bugs)	10	Use in combination with 0.25-1.0% non-phytotoxic crop oil in sufficient water to cover twigs and leaves.
PSYLLIDS (such as Pear psylla)	8	Spray when pests first appear. Repeat application after 7-10 days. Use in combination with 0.25-1.0% non-phytotoxic crop oil in sufficient water to cover undersides of leaves.
SCALES (such as Brown Soft scales, California Red scales, Coffee scales, Olive scales, San Jose scales)	10	Use in combination with 0.25-1.0% non-phytotoxic crop oil in sufficient water to cover twigs and leaves.
WEEVILS (such as Black Vine weevils, Strawberry Vine weevils)	10	Make foliar applications to deter adult feeding. Make at least 3 to 4 applications 10 days apart.
WHITEFLIES (such as Silverleaf whiteflies, Woolly whiteflies)	8	Use in combination with 0.25-1.0% non-phytotoxic crop oil in sufficient water to cover undersides of leaves.

¹ When infestation is heavy, or when plant canopy is dense, ECOZIN 3% EC may be used at a rate up to twice (2x) that shown in the above table (not to exceed 22.5 oz/acre). When combining with other insecticides, half the rate of ECOZIN 3% EC is recommended.

CHEMIGATION OF ECOZIN 3% EC

General Information

This product may be applied through drip (trickle) or sprinkle (center pivot, lateral move, end tow, side roll, traveler, solid set or hand move), and flood (basin) 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 non-uniform distribution of treated water. If you have questions about calibration, you should 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.

Dilute ECOZIN 3% EC with water before introduction into the system. Use the diluted mixture within 8 hours. Do not apply in irrigation water if the pH exceeds 7.0. The optimum pH for application is a range of 5.5 to 6.5. If needed, the pH of the irrigation water can be adjusted by use of a suitable buffering agent. Agitation is necessary. Apply at the rate recommended in the Directions for Use using sufficient water to achieve an even distribution within an 8-hour period. Do not apply ECOZIN 3% EC at a rate that exceeds 20 grams active ingredient per acre (22.5 oz). If applying ECOZIN 3% EC in combination with other products, refer to the compatibility statement in the USE PRECAUTIONS section.

Observe the Following Precautions if Your Chemigation System is Connected to a Public Water System

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 a year.

Chemigation systems connected to a public water system must contain a functional, reduced-pressure zone (RPZ), backflowpreventer 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 of 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 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, or in the cases where there is not a 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 speeds favor drift beyond the area intended for treatment.

Statements Concerning the Operation of Sprinkler Chemigation or Drip (Trickle) Utilizing a Pressurized Water and Pesticide Injection System

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 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 that 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.

Statements Concerning the Operation of Flood (Basin) Irrigation Utilizing Gravity Flow or Pressurized Water and Pesticide Injection System

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 for water source contamination from backflow if water flow stops. Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- The system must contain a functional interlocking 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 the 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 that 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.

STORAGE AND DISPOSAL

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

STORAGE: Do not store this product above 100°F or below 20°F for extended periods of time. Keep containers tightly closed and in original containers when not in use.

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

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

LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants (a) that this product conform to the chemical description on the label; (b) that this product is reasonably fit for the purposes set forth in the directions for use, subject to the inherent risks referred to herein, when it is used in accordance with such directions; and (c) that the directions, warnings, and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants and residues on food crops, and upon reports of field experience. Tests have not been made on all varieties of food crops and plants, or in all states or under all conditions.

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