

89152-2

12/4/2012

1/25



U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Biopesticides and Pollution Prevention Division
 (7511P)
 1200 Pennsylvania Avenue NW
 Washington, DC 20460

EPA Reg. Number:
89152-2

Date of Issuance:
DEC 04 2012

Term of Issuance: **UNCONDITIONAL**

Name of Pesticide Product:
Defeat 1.5

NOTICE OF PESTICIDE:
 Registration
 Reregistration
 (under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):
 Ecostadt Technologies, LLC
 2600 East Bidwell Street, Suite 230
 Folsom, CA 95630

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

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

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

This registration does not eliminate the need for continual reassessment of the pesticide. If the EPA determines at any time, that additional data are required to maintain in effect an existing registration, the Agency will require submission of such data under section 3(c)(2)(B) of FIFRA.

This product is registered in accordance with FIFRA section 3(c)(5) and is subject to the following terms and conditions:

1. Submit and/or cite all data required for registration of your product under FIFRA section 3(c) (5) when the Agency requires all registrants of similar products to submit such data.
2. Revise the EPA Registration Number to read **EPA Reg. No. "89152-2"** before this product is released for shipment.
3. Submit two (2) copies of the final printed labeling before you release the product for shipment. Refer to the A- 79 enclosure for a further description of final printed labeling.

If these conditions are not complied with, this registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

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

Signature of Approving Official:
Felecia Fort
 Felecia A. Fort, Acting Associate Director
 Biopesticides and Pollution Prevention Division

Date:
12/4/12

2/25

DEFEAT1.5
12/03/12

DEFEAT 1.5 (EPA Reg. No. 89152-E)

MASTER LABEL

Sub Label A: Commercial Agriculture, Greenhouses, Turf & Ornamental Use

Sub Label B: Residential/Homeowner Use

**DEFEAT 1.5
AZADIRACHTIN BASED BOTANICAL INSECTICIDE, MITICIDE AND NEMATICIDE**

For Agriculture and Commercial Use, Greenhouse, Shade House, Interiorscape, Nursery, Outdoor and Indoor Food Crops, Turfgrass, Outdoor Shrubs, Trees, Ornamentals, Home and Garden Use

For controlling and repelling Insects such as aphids, armyworms, beetles, budworms, cutworms, fungus gnats, leafhoppers, leaf miners, leaf rollers, lepidopterous larvae, loopers, mushroom flies, sawflies, thrips, webworms, and whiteflies; and plant parasitic nematodes such as dagger, golden, and root knot nematodes.

ACTIVE INGREDIENT:	Azadirachtin*	1.50%
INERT INGREDIENTS:	98.50%
		100.00%

* Contains 0.14 lb (64 grams) of azadirachtin per gallon

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FIRST AID

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.

If inhaled:

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

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. Call your poison control center at 1-800-222-1222. For information on product, usage, call 1-888-858-7378, Seven days a week, 6:30 am to 4:30 pm Pacific Time. During other times, call the poison control center 1-800-222-1222.

FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY:

Transportation: Chemtrec1-800-424-9300

Medical: Hazard information Services (H.I. S1) 800-228-5635, Extension 169.

ECOSTADT TECHNOLOGIES LLC
2600 East Bidwell St, Suite 230
Folsom, CA 95630
Phone: 916-984-5800

Net Contents: 2, 4, 8, 16, 32 oz,
1, 2.5, 5.0 Gallons
EPA Reg. No. 89152-E
EPA Est. No.: 72806-OK-001 or
88774-CA-001

Batch No.:

ACCEPTED

DEC 04 2012

Under the Federal Insecticide, Fungicide,
and Rodenticide Act, as amended, for
the pesticide registered under
EPA Reg. No. 89152-2

3/25

DEFEAT1.5
12/03/12

DEFEAT 1.5 (EPA Reg. No. 89152-E)
MASTER LABEL
Sub Label A: Commercial Agriculture, Greenhouses, Turf & Ornamental Use

DEFEAT 1.5
AZADIRACHTIN BASED BOTANICAL INSECTICIDE, MITICIDE AND NEMATICIDE

For Agriculture and Commercial Use, Greenhouse, Shade House, Interiorscape, Nursery, Outdoor and Indoor Food Crops, Turfgrass, Outdoor Shrubs, Trees, Ornamentals

For controlling and repelling Insects such as aphids, armyworms, beetles, budworms, cutworms, fungus gnats, leafhoppers, leaf miners, leaf rollers, lepidopterous larvae, loopers, mushroom flies, sawflies, thrips, webworms, and whiteflies; and plant parasitic nematodes such as dagger, golden, and root knot nematodes.

ACTIVE INGREDIENT : Azadirachtin* 1.50%
INERT INGREDIENTS : 98.50%
100.00%

*Contains 0.14 lb (64 grams) of azadirachtin per gallon

KEEP OUT OF REACH OF CHILDREN
CAUTION

FIRST AID	
If on skin or clothing:	<ul style="list-style-type: none"> • 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.
If inhaled:	<ul style="list-style-type: none"> • 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.
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. Call your poison control center at 1-800-222-1222. For information on product, usage, etc., call 1-888-858-7378, Seven days a week, 6:30 am to 4:30 pm Pacific Time. During other times, call the poison control center 1-800-222-1222.</p>	

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2600 East Bidwell St, Suite 230
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Phone: 916-984-5800

Net Contents: 2, 4, 8, 16, 32 Oz,
1, 2.5, 5.0 Gallons
EPA Reg. No.: 89152 - Y
EPA Est. No.: 72806-K-001 Or
88774-CA-001-
Batch No:

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if inhaled or absorbed through skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling. Avoid breathing spray mist. Remove contaminated clothing and wash clothing before use.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

Long-sleeved shirt and long pants:

Chemical-resistant (such as barrier laminate, butyl, nitrile, neoprene, polyvinyl chloride, or viton) gloves.

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.

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, 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 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 4 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:

- Long-sleeved shirt and long pants
- Chemical – resistant (such as barrier laminate, butyl, nitrile, neoprene, polyvinyl chloride, or viton) gloves
- Socks and shoes

NON-AGRICULTURAL USE REQUIREMENTS

These requirements apply to uses of this product that are NOT within the WPS for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. For other uses including golf courses and other non-agricultural uses, do not enter treated areas without protective clothing until sprays have dried.

PRODUCT DESCRIPTION

DEFEAT 1.5 is an emulsifiable concentrate containing 1.5% by weight azadirachtin. It has been evaluated on a wide variety of ornamental, forestry, and food crops. No phytotoxicity at recommended field rates has been observed. DEFEAT 1.5 is an effective repellent, anti-feedant and insect growth regulator. DEFEAT 1.5 is a repellent and anti-feedant and effectively stops larval and adult damage to plants. DEFEAT 1.5 is an insect growth regulator on immature insects and does not control adult insects.

MODE OF ACTION

DEFEAT 1.5 controls larval and adult feeding stages of insects through repellency and anti-feedant properties thus effectively stopping or minimizing feeding damage to plants.

DEFEAT 1.5 controls adult insects through oviposition deterrence. Insects do not prefer treated plants.

DEFEAT 1.5 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

DEFEAT 1.5 has been found to be compatible with the most commonly used insecticides, fungicides and fertilizers. However to avoid plant damage, a jar compatibility test must be conducted before mixing or applying the product. If Defeat 1.5 is to be tank mixed, a test must be made of all combinations of products before conducting broad range applications. To conduct a jar compatibility test, measure one pint of water and adjust pH. Add pesticides to be mixed @ 1 tea spoon/pint. After mixing, let the solution stand for 15 minutes. Separation, sedimentation and grainy appearance is an indication of incompatibility. Mixing well is an indication of compatibility. Once compatibility has been established using the jar test method, next test the tank-mix combinations on a small sample of plants for possible adverse effects (such as settling out or flocculation) and for phytotoxic effects. Because environmental conditions can alter the interactions between compounds, conduct a compatibility test for both new and previously used combinations. Always test mixtures containing Defeat 1.5 and several materials or very concentrated spray mixtures before applying.

Do not use DEFEAT 1.5 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.

Follow the directions for use, precautions and limitations for use on all of the product labels used in the combination. Some Defeat 1.5 tank mix combinations of active ingredients are listed below:

DEFEAT 1.5 plus non – phytotoxic crop oil*
DEFEAT 1.5 plus Endosulfan*
DEFEAT 1.5 plus Chlorpyrifos*
DEFEAT 1.5 plus Acephate*
DEFEAT 1.5 plus Bacillus thuringiensis* (BT)
DEFEAT 1.5 plus Bifenthrin*
DEFEAT 1.5 plus Esfenvalerate*
DEFEAT 1.5 plus Abamectin*
DEFEAT 1.5 plus Diflubenzuron*
DEFEAT 1.5 plus Pyrethrum + piperonyl butoxide (for fogging use)*
DEFEAT 1.5 plus Spinosad*
DEFEAT 1.5 plus Emamectin Benzoate*

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

APPLICATION INSTRUCTIONS

READ ALL DIRECTIONS AND PRECAUTIONS BEFORE USE

DEFEAT 1.5 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 45 fl. Oz. (20 grams active ingredient) per acre per application.

MIXING: Shake well before mixing. Always use this product promptly after mixing with water. DEFEAT 1.5 will break down in the spray solution if not used within 8 hours. Never allow tank mix to stand overnight. DEFEAT 1.5 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 Defeat 1.5 alone (or) when used with other products. For optimum performance, use any buffering agent. When mixing with other approved agrichemicals, always ensure proper agitation in the spray tank to ensure uniform application.

Use the Rates tables below, to determine the amount of DEFEAT 1.5 required for the number of acres to be treated. Always use clean equipment. To a clean spray tank, add at least one-half the water to be sprayed. Begin agitation and add the determined amount of DEFEAT 1.5 listed in the Use Rates Table. Add the remaining water and continue agitation until it is mixed well.

DEFEAT 1.5 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: DEFEAT 1.5 can be applied as a foliar spray or a drench to soil or soil-less media (e.g., greenhouses and mushroom houses) to control insects and nematodes. When needed, soil drenches can also be used to control the listed soil-borne pests, including soil-borne larvae of foliar insect pests. When applying as a drench, avoid excessive leaching. DEFEAT 1.5 can also be applied through sub-surface soil treatment equipment (e.g. turf grass). To repel adults, flies apply through fogging equipment. Always follow equipment manufacturers use directions.

Apply DEFEAT 1.5 using any powered or manual pesticide application equipment, including 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, make 2 to 3 applications at 7 to 10 day intervals. Foliar applications should be made to both sides of leaves. In addition, a surfactant used as per the manufacturer's recommendations may improve product performance. The addition of non-phytotoxic crop oil at rates not exceeding 1.0% (volume / volume) generally enhances insect control.

USE SITES

USE DEFEAT 1.5 ON:

Field and Greenhouse Food Crops - Brassica (cole) crops, cucurbits, eggplants, herbs and spices, legumes, peppers, tomatoes, and other miscellaneous crops grown in greenhouses.

Edible Fungi Group-Agaricus, crimini, enoki, maitake, oyster, portobello, shitake, and white mushrooms.

Root and Tuber Vegetables Group- Artichokes, beets, carrots, ginger, horseradish, potatoes, radishes, rutabagas, sweet potatoes, turmeric, turnips, yams.

Leafy and Brassica Crop Vegetables Crop Grouping (including Brassica Leafy Vegetables)- Amaranth, broccoli, Brussels sprouts, cabbage, cauliflower, celery, chervil, Chinese cabbage, collards, cress, endives, fennel, kale, kohlrabi, lettuce, mizuna, mustard greens, parsley, purslane, rape greens, rhubarb, spinach, Swiss chard.

Legume Vegetables Group- beans (field, kidney etc.), chickpeas, cowpeas, guar, jackbeans, lablab beans, lentils, peas, pigeon peas, soybeans, sword beans.

Fruiting Vegetables Group- Eggplants, ground cherries, pepinos, peppers, pimentos, tomatillos, tomatoes.

Cucurbit Vegetables Group- bitter melons, Chayotes, Chinese wax gourds, citron melons, cucumbers, gherkins, gourds, muskmelons (such as cantaloupes, casabas Crenshaw etc.), pumpkins, squash, watermelons.

Citrus Fruits Group- Calamondins, citrus citrons, citrus hybrids, grapefruits, kumquats, lemons, limes, mandarins, oranges, pummelos, Satsuma mandarins.

Pome Fruits Group- Apples, crabapples, loquats, mayhaws, oriental pears, pears, quinces.

Stone Fruits Group- Apricots, cherries, nectarines, peaches, plums, prunes

Berries Group- Blackberries and caneberries, blueberries, currants, elderberries, gooseberries, huckleberries, loganberries, raspberries, strawberries, youngberries.

Forage - Alfalfa, clover, trefoil or vetch.

Cereal Grains Group- Barley, buckwheat, corn, millet, oats, popcorn, rice, rye, sorghum, teosintes, triticale hybrids, wheat, wild rice.

Cotton and Tobacco

Herbs and Spices Group- Allspice, angelica, anise, annatto, balm, basil, black and white peppers, borage, burnet, chamomile, caper buds, cardamom, caraway, cassia, catnip, celery seeds, chervil, chives, cinnamon, clary, cloves, coriander (cilantro), costmary, cumin, curry leaf, dills; fennels, fenugreek, grains of paradise, horehound, hyssop, juniper berry, lavender, lemongrass, lavage, mace, marigolds, marjoram, mustard seeds, nasturtium, nutmeg, parsley, pennyroyal, poppy seeds, rosemary, rue, saffron, sage, savory, sweet bay (bay leaf), tansy, tarragon, thyme, vanilla, wintergreen, woodruff, wormwood.

Bulb Vegetables (Allium spp) Crop Group- Garlic, leeks, onions, shallots

Nuts Group- Almonds, beechnuts, Brazil nuts, butternuts, cashews, chestnuts, chinquapin, filberts, hickory nuts, lychee nuts, macadamias, pecans, pistachios, walnuts.

Oilseed Group- Canola, castor, crambe, guar, jojoba, peanuts, rape, safflower, sesame, soybean, sunflower.

Tropical fruits- Atemoyas, bananas, breadfruits, cherimoyas, durians, guavas, malangas, mangos, papayas, passion fruits, star fruits.

Other Food and Non-Food Crops - Asparagus, avocados, birdseed, cacao, coffee, edible flowers, feijoa, figs, ginseng, grapes, guayule, hops, kiwis, okras, olives, palms, papayas, pawpaws, persimmons, pineapples, rambutans, sugarcane, tamarillos, tea, tobacco, water chestnuts, watercress.

ORNAMENTAL PLANTS- African violets, ageratum, aster, aucuba, begonia, cacti, calendula, calla, carnation, ceanothus, chrysanthemum, cineraria, coleus, cotoneaster, cyclamen, daffodil, dahlia, delphinium, ficus, foliage plants, fuchsia, gardenia, geranium, gloxinia, hyacinth, hydrangea, iris, ivy, lily, maidenhair fern, marigold, narcissus, orchid, pansy, pelargonium, peony, phlox, pittosporum, poinsettia, pyracantha, rubber plant, snapdragon, stock, tulip, wandering jew, yew, yucca, zinnia.

CHRISTMAS TREES

ORNAMENTAL TREES and SHRUBS- Andromeda, arbor vitae, ash, Austrian pine, azalea, beech, birch, birdsnest spruce, blue spruce, bougainvillea, boxwood, butternut, camellia, cedar, chamaecyparis, cherry, crabapple, Cyprus, dogwood, Douglas fir, elm, euonymus, firethorn, forsythia, hackberry, hawthorn, hemlock, hickory, holly, honeylocust, horse chestnut, ilex, juniper, larch laurel, lilac, linden, London plane, magnolia, manvillea, maple, mimosa, mountain ash, myrtle, oak, pachysandra, peach pine, photinia, planetree, pines, poplar, privet, quince, rhododendron, roses, spruce, sycamore, white cedar, and white pine.

TURF and TURFGRASS- Bentgrass, Bermuda grass, bluegrass, centipede grass, fescue, ryegrass St. Augustine, wheatgrass, zoysia grass.

INTERIORSCAPES, HYDROPONICS, AEROPONICS Plants- Vegetables, Herbs, Ornamentals.

NON-CROP USES- Manure, composts, cull piles, mulches, potting soil, top soil, farm yards, fence rows, rights of way, fallow land, barrier strips.

**DEFEAT 1.5 USE RATE
 FOR PESTS BY USE SITE**

DEFEAT 1.5 is intended for use on outdoor plants and food crops, mushrooms grown in houses, plants grown indoors or in greenhouses, interiorscapes and nurseries. It can be used to control any of the following insects and nematodes.

Use the tables below to determine the appropriate use rate for your site / pest combination. Rates are provided in ounces of DEFEAT 1.5 per area or row-length. When infestation is heavy, or when plant canopy is dense, DEFEAT 1.5 may be used at a rate up to twice (2X) that shown in the above table, not to exceed 45 oz / acre. When combining with other insecticides, use half the recommended rate of DEFEAT 1.5.

DEFEAT 1.5 USE RATES for OUTDOOR PLANTS including : FOOD CROPS and NON-CROP USE (TREES, TURFGRASS, NURSERY, and ALL OUTDOOR ORNAMENTAL PLANTS)		
PEST	DEFEAT 1.5 OZ / ACRE	REMARKS
WHITEFLIES such as: Greenhouse whiteflies, Silverleaf whiteflies, Woolly whiteflies	16	Use in combination with 0.25 – 1.0% non-phytotoxic crop oil in sufficient water to cover undersides of leaves.
LEAFMINERS such as: Azalea, leafminers, Birch leafminers, Citrus leafminers, Serpentine leafminers, Vegetable leafminers.	20	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	20	Use in combination with 0.25 – 1.0% non-phytotoxic crop oil in sufficient water to cover twigs and leaves.
MEALY BUGS such as: Citrus mealybugs	20	Use in combination with 0.25 – 1.0% non-phytotoxic crop oil in sufficient water to cover twigs and leaves.
THRIPS such as: Citrus thrips, Onion thrips, Thrips palmi,	20	Spray when pests first appear. Repeat every 5 to 7 days.
APHIDS such as: Cotton aphids, Green peach aphids, Pea aphids, Potato aphids	20	Spray when pests first appear. <u>For food crops:</u> 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. <u>For non-food crops:</u> Repeat application every 5 to 7 days.

<p>PSYLLIDS such as: Pear psylla</p>	<p>16</p>	<p>Spray when pests first appear. <u>For food crops:</u> 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. <u>For non-food crops:</u> Repeat application every 5 to 7 days.</p>
<p>LEAFHOPPERS such as: Grape leafhoppers</p>	<p>20</p>	<p>Spray when pests first appear. <u>For food crops:</u> 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. <u>For non-food crops:</u> Repeat application every 5 to 7 days.</p>
<p>BUGS such as: Boxelder bugs, Chinch bugs, Lygus bugs Spittle bugs, Stink bugs</p>	<p>20</p>	<p>Spray nymphs early.</p>
<p>FLIES such as: Blueberry maggots, Cherry maggots, Crane flies, Fruit flies, Midges, Onion maggots, Walnut husk flies</p>	<p>20</p>	<p><u>For food crops:</u> Spray when pests first appear. <u>For non-food crops:</u> Drench soil to kill larvae</p>
<p>SAWFLIES such as: European pine sawflies, Yellow headed pine sawflies</p>	<p>20</p>	<p>Treat larvae early.</p>
<p>CATERPILLARS such as: Armyworms, Artichoke plume moths, Bagworms, Bollworms, Budworms, Cabbage butterflies, Cabbage Loopers, Cankerworms, Caseworms, Corn earworms, Cutworms, Diamond-backed moths, Fruitworms, Grapeleaf skeletonizers, Gypsy moths, Hickory shuckworms, Hornworms, Imported cabbage worms Leafperforators, Leafrollers, Melonworms, Navel Orangeworms, Oblique banded leafrollers, Omnivorous leafrollers. Oriental fruit moths, Pickle worms, Pine tip moths , Pinworms, red-banded leaf rollers, Sod webworms, Soybean loopers, Tent caterpillars, Tobacco budworms, Tussock moths.</p>	<p>16</p>	<p>Spray when pests first appear. <u>For food crops:</u> 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. <u>For non-food crops:</u> Repeat application every 5 to 7 days.</p>
<p>BETLES such as: Bark Beetles, Blueberry flea beetles, Boll weevils, Colorado potato beetles, Flea beetles, Japanese beetles, Leaf beetles, Mexican bean beetles, Pepper weevils, Phylloxera Rose Chafers,</p>	<p>16</p>	<p>Spray when pests first appear. <u>For food crops:</u> 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. <u>For non-food crops:</u> Repeat application</p>

Twig girdlers.		every 5 to 7 days.
WEEVILS such as: Black vine weevils, Strawberry vine weevils	20	Make foliar applications to deter adult feeding. Make at least 3 to 4 applications 10 days apart.
BORERS such as: Peach twig borers, Peachtree borers, Dogwood borers, Cranberry borers.	20	Spray soon after egg hatch. For food crops: Use in combination with 0.25% - 1.0% non- phytotoxic crop oil in sufficient water to cover undersides of leaves.
MOLE CRICKETS	20	Spray nymphs soon after egg hatch.
NEMATODES such as: Burrowing nematodes, Dagger nematodes, Golden nematodes, Root knot nematodes	30	Apply in sufficient amount of water to penetrate in the soil to a depth of 12 inches. Repeat applications every 3 or 4 weeks or as needed.
MITES such as: Red spider mites, Brown mite, Clover mites, Conifer spider mite, European red mites, Spruce spider mites and Two spotted spider mites	20	Spray when pests first appear. Repeat every 5 to 7 days.

* When infestation is heavy, or when plant canopy is dense, DEFEAT 1.5 may be used at a rate up to twice (2X) that shown in the above table, not to exceed 45 oz/acre. When combining with other insecticides, half the rate of DEFEAT 1.5 is recommended.

DEFEAT 1.5 USE RATES for MUSHROOMS		
PEST	DEFEAT 1.5 OZ / ACRE	REMARKS
Mushroom flies, Nematodes, Phorid flies	1.0	Apply as drench to the casing layer, media or compost. Make at least 4 to 5 applications 7 to 10 days apart. To repel adults, apply with fogging equipment at first sign of activity. For mushroom house use: mix into the casing layer, or into media during the spawn run. Can be applied between breaks until the final flush.

For Use Indoors or in Greenhouses

Use the table below to determine the appropriate use rate for each pest. Foliar sprays for individual plants should thoroughly wet both sides of the leaves without causing runoff. Spray groups of potted plants at a rate of one gallon of finished spray for 500 square feet. When used as a drench apply 1 pint of finished spray for each gallon of soil in the pot.

DEFEAT 1.5 USE RATES FOR PLANTS GROWN INDOORS or in GREENHOUSES, HYDROPONICS and AEROPONICS, UNDER SHADECLOTHES , INTERIORSCAPE and NURSERIES		
PEST	OZ of DEFEAT 1.5 per 100 GALLON	REMARKS
WHITEFLIES such as: Greenhouse whiteflies, Silverleaf whiteflies	20 for 50,000 sq. ft	Ensure good coverage to top and bottom of leaves against larvae and pupae. Can be applied after bract formation on poinsettias (test for phytotoxicity prior to large scale use).
LEAFMINERS such as: Serpentine leafminers	20 for 50,000 sq. ft	Spray early. Make 2 to 3 applications in rotation with adulticides such as pyrethroids
SOFT SCALES	20 for 50,000 sq. ft	Use in combination with 0.5 – 1.0% non-phytotoxic crop oil in sufficient water to cover twigs and leaves.
MEALY BUGS	16 for 40,000 sq. ft	Always use in combination with 0.5 – 1.0% non – phytotoxic crop oil
THRIPS such as: Western flower thrips	16 for 40,000 sq. ft	Spray when pests first appear. Repeat every 5 to 7 days.
APHIDS such as: Green peach aphids, Pea aphids, Cotton aphids, Rose aphids	16 for 40,000 sq. ft	Spray when pests first appear. Addition of 0.5 – 1.0% non-phytotoxic crop oil will enhance efficacy.
LACEWINGS such as: Azalea lacewings	16 for 40,000 sq. ft.	Spray when pests first appear.
FLIES such as: Crane flies, Fungus gnats, Shore flies	16 for 40,000 sq. ft.	Add at least 1 pint of mixture per gallon pot as soil drench. Repeat application every 7 days for 3 weeks. For poinsettias, lilies and bedding plants, also make 1 application 10 to 15 days prior to shipping plants to prevent adult emergence.
CATERPILLARS such as: Army worms, Bagworms, Cutworms, Leafhoppers, Leafrollers, Loopers, Spruce budworms, Webworms	16 for 40,000 sq. ft.	Spray when pests first appear.
BORERS such as: Peachtree borers	20 for 50,000 sq. ft.	Spray when pests first appear. Repeat as needed.
BEETLES such as: Bark beetles, Flea beetles, Japanese beetles	20 for 50,000 sq. ft.	Spray when pests first appear. Repeat as needed.
WEEVILS such as: Black vine weevils, strawberry vine weevils	16 for 40,000 sq. ft.	Make foliar applications to deter adult feeding. Drench soil at a rate of 1 pint per gallon pot during spring and fall periods to control larvae. Make at least 3 to 4 applications 10 days apart.

NEMATODES such as: Burrowing nematodes, Dagger nematodes, Golden nematodes, Root knot nematodes	16 for 40,000 sq. ft.	Drench at least 1 pint of mixture per gallon pot once a week for 4 weeks. Avoid leaching – drench until moist to the touch. For heavy infestations, use twice the rate and drench more frequently.
MITES such as: Red spider mites, Brown mite, Clover mites, Conifer spider mite, European red mites, Spruce spider mites and Two spotted spider mites	20 for 40,000 sq. ft.	Spray when pests first appear. Repeat every 5 to 7 days.

DEFEAT 1.5 SPRAY PREPARATION FOR LOW VOLUME APPLICATIONS FOR ANY PLANTS GROWN INDOORS, GREENHOUSE, UNDER SHADECLOTHES, INTERIORSCAPES AND NURSERIES

PEST	RATE/ QUART	RATE/ 1 GAL	RATE/ 5 GAL	RATE/ 10 GAL	RATE/ 20 GAL	REMARKS
WHITEFLIES	1.6 ml ($\frac{1}{3}$ tsp)	6.0 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	60 ml (12 tsp)	120 ml (24 tsp)	Spray when pests first appear. Repeat every 5 to 7 days.
LEAFMINERS	1.6 ml ($\frac{1}{3}$ tsp)	6.0 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	60 ml (12 tsp)	120 ml (24 tsp)	Spray when pests first appear. Repeat every 5 to 7 days.
SOFT SCALES	1.6 ml ($\frac{1}{3}$ tsp)	6.0 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	60 ml (12 tsp)	120 ml (24 tsp)	Spray when pests first appear. Repeat every 5 to 7 days.
MEALY BUGS	1.2 ml ($\frac{1}{4}$ tsp)	4.8 ml (1 tsp)	24 ml ($4\frac{4}{5}$ tsp)	48 ml ($9\frac{3}{5}$ tsp)	96 ml ($19\frac{1}{5}$ tsp)	Spray when pests first appear. Repeat every 5 to 7 days.
THRIPS	1.2 ml ($\frac{1}{4}$ tsp)	4.8 ml (1 tsp)	24 ml ($4\frac{4}{5}$ tsp)	48 ml ($9\frac{3}{5}$ tsp)	96 ml ($19\frac{1}{5}$ tsp)	Spray when pests first appear. Repeat every 5 to 7 days.
APHIDS	1.2 ml ($\frac{1}{4}$ tsp)	4.8 ml (1 tsp)	24 ml ($4\frac{4}{5}$ tsp)	48 ml ($9\frac{3}{5}$ tsp)	96 ml ($19\frac{1}{5}$ tsp)	Spray when pests first appear. Repeat every 5 to 7 days.
LACE WINGS	1.2 ml ($\frac{1}{4}$ tsp)	4.8 ml (1 tsp)	24 ml ($4\frac{4}{5}$ tsp)	48 ml ($9\frac{3}{5}$ tsp)	96 ml ($19\frac{1}{5}$ tsp)	Spray when pests first appear. Repeat every 5 to 7 days.
FLIES	1.2 ml ($\frac{1}{4}$ tsp)	4.8 ml (1 tsp)	24 ml ($4\frac{4}{5}$ tsp)	48 ml ($9\frac{3}{5}$ tsp)	96 ml ($19\frac{1}{5}$ tsp)	Spray when pests first appear. Repeat every 5 to 7 days.

CATERPILLARS	1.2 ml ($\frac{1}{4}$ tsp)	4.8 ml (1 tsp)	24 ml ($4\frac{4}{5}$ tsp)	48 ml ($9\frac{3}{5}$ tsp)	96 ml ($19\frac{1}{5}$ tsp)	Spray when pests first appear. Repeat every 5 to 7 days.
BORERS	1.6 ml ($\frac{1}{3}$ tsp)	6.0 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	60 ml (12 tsp)	120 ml (24 tsp)	Spray when pests first appear. Repeat every 5 to 7 days.
BETTERLES	1.6 ml ($\frac{1}{3}$ tsp)	6.0 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	60 ml (12 tsp)	120 ml (24 tsp)	Spray when pests first appear. Repeat every 5 to 7 days.
WEEVILS	1.2 ml ($\frac{1}{4}$ tsp)	4.8 ml (1 tsp)	24 ml ($4\frac{4}{5}$ tsp)	48 ml ($9\frac{3}{5}$ tsp)	96 ml ($19\frac{1}{5}$ tsp)	Spray when pests first appear. Repeat every 5 to 7 days.
NEMATODES	1.2 ml ($\frac{1}{4}$ tsp)	4.8 ml (1 tsp)	24 ml ($4\frac{4}{5}$ tsp)	48 ml ($9\frac{3}{5}$ tsp)	96 ml ($19\frac{1}{5}$ tsp)	Spray when pests first appear. Repeat every 5 to 7 days.
MITES	1.6 ml ($\frac{1}{3}$ tsp)	6.0 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	60 ml (12 tsp)	120 ml (24 tsp)	Spray when pests first appear. Repeat every 5 to 7 days.

* When infestation is heavy, or when plant canopy is dense, DEFEAT 1.5 may be used at a rate up to twice (2X) shown in the table, not to exceed 45 oz/acre. When combining with other insecticides, use half the rate of DEFEAT 1.5.

DEFEAT 1.5 APPLICATION TABLE FOR ALL INDOOR PLANTS SUCH AS GREENHOUSE, UNDER SHADECLOTHES, INTERIORSCAPES, NURSERIES, HYDROPONICS, AEROPONICS AND RECIRCULATORY APPLICATIONS

Gallon of water	AMOUNT OF DEFEAT 1.5				APPLICATION INTERVAL
	0.02%	0.04%	0.08%	0.16%	
1 GALLON	0.80 ml ($\frac{1}{6}$ tsp)	1.5 ml ($\frac{1}{3}$ tsp)	3.0 ml ($\frac{3}{5}$ tsp)	6.0 ml ($1\frac{1}{5}$ tsp)	7 – 14 days
5 GALLON	4.0 ml ($\frac{4}{5}$ tsp)	7.5 ml ($1\frac{1}{6}$ tsp)	15.0 ml (3 tsp)	30.0 ml (6 tsp)	7 – 14 days
15 GALLON	12.0 ml ($2\frac{2}{5}$ tsp)	22.5 ml ($4\frac{1}{2}$ tsp)	45.0 ml (9 tsp)	90.0 ml (18 tsp)	7 – 14 days
20 GALLON	16.0 ml ($3\frac{1}{5}$ tsp)	30.0 ml (6 tsp)	60.0 ml (12 tsp)	120.0 ml (24 tsp)	7 – 14 days
25 GALLON	20.0 ml (4 tsp)	37.5 ml ($7\frac{1}{2}$ tsp)	75.0 ml (15 tsp)	150.0 ml (30 tsp)	7 – 14 days
50 GALLON	40.0 ml (8 tsp)	75.0 ml (15 tsp)	150.0 ml (30 tsp)	300.0 ml (60 tsp)	7 – 14 days

Use DEFEAT 1.5 in greenhouses, interiorscapes, hydroponics, aeroponics and recirculatory system for the control of foliar pests, soil borne insect larvae, fungus gnats, nematodes etc. Dilute DEFEAT 1.5 in the concentration of 0.02 to 0.16

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% with water in recirculatory and hydroponic liquid system. Agitate the mixture until the product is completely dispersed. Use lower concentration (0.02%) for mild infestations and higher concentration (0.16%) for severe infestation. Do not exceed 45 oz/acre.

DEFEAT 1.5 APPLICATION TABLE FOR DRENCH APPLICATIONS FOR INDOOR PLANTS AND OUTDOOR PLANTS IN GREENHOUSES, INTERIORSCAPES, HYDROPONIC AND AEROPONIC GROWING SYSTEMS

Gallon of water	AMOUNT OF DEFEAT 1.5				APPLICATION INTERVAL
	0.02%	0.04%	0.08%	0.16%	
1 GALLON	0.80 ml ($\frac{1}{6}$ tsp)	1.5 ml ($\frac{1}{3}$ tsp)	3.0 ml ($\frac{3}{5}$ tsp)	6.0 ml ($1\frac{1}{5}$ tsp)	7 – 14 days
5 GALLON	4.0 ml ($\frac{4}{5}$ tsp)	7.5 ml ($\frac{1}{6}$ tsp)	15.0 ml (3 tsp)	30.0 ml (6 tsp)	7 – 14 days
15 GALLON	12.0 ml ($2\frac{2}{5}$ tsp)	22.5 ml ($4\frac{1}{2}$ tsp)	45.0 ml (9 tsp)	90.0 ml (18 tsp)	7 – 14 days
20 GALLON	16.0 ml ($3\frac{1}{5}$ tsp)	30.0 ml (6 tsp)	60.0 ml (12 tsp)	120.0 ml (24 tsp)	7 – 14 days
25 GALLON	20.0 ml (4 tsp)	37.5 ml ($7\frac{1}{2}$ tsp)	75.0 ml (15 tsp)	150.0 ml (30 tsp)	7 – 14 days
50 GALLON	40.0 ml (8 tsp)	75.0 ml (15 tsp)	150.0 ml (30 tsp)	300.0 ml (60 tsp)	7 – 14 days

Drench soil in the pot with one (1) pint of finished product dilution per gallon of soil. Use lower concentration (0.02%) for mild infestations and higher concentration (0.16%) for severe infestation.

CHEMIGATION OF DEFEAT 1.5

General Information

This product may be applied only through drip (trickle) or sprinkler (center pivot, lateral move, end tow, side roll, traveler, big gun, solid set, or hand move), 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 DEFEAT 1.5 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 DEFEAT 1.5 at a rate that exceeds 20 grams active ingredient per acre (45 fl oz of E.C.). If applying DEFEAT 1.5 in combination with other products refer to the compatibility statement in the USE PRECAUTION 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 systems must contain a functional, reduced-pressure zone (RPZ), backflow preventer or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top 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; 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 back flow. The pesticide injection pipeline must contain a functional, automatic, quick – closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system, interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch 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 back flow if water flow stops.

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements.

- a. 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 back flow.
- b. 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.
- c. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side to 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, (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

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

Pesticide Storage: Do not store this product above 100 degrees F or below 20 degrees F for extended periods of time. Store in original container in a dry, cool, well-ventilated area.

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

Container Disposal: Non refillable container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill container ¼ full with water and recap. Shake 10 seconds. Pour rinsate into application equipment or mix tank or store rinsate for disposal. Drain for 10 seconds after flow begins to drip. Repeat this procedure two more times.

IMPORTANT: PLEASE READ BEFORE USE

To the extent permitted by applicable law, by using this product, the user accepts the following: LIMITED WARRANTY:

ECOSTADT TECHNOLOGIES LLC warrants that (a) this product conforms to the chemical description on its label; (b) this product is reasonably fit for the purposes stated on its label, subject to the inherent risks referred to herein, when used in accordance with its directions; and (c) that the directions, cautions and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and plants, and upon reports of field experience. Testing has not been performed on all varieties of food crops, and plants, in all states, or under all application, weather and crop conditions. To the extent permitted by applicable law, there are no express warranties other than those set forth herein. ECOSTADT TECHNOLOGIES LLC neither makes nor intends, nor does it authorize any agent or representative to make, any other warranty, express or implied. To the extent permitted by applicable law, ECOSTADT TECHNOLOGIES LLC expressly excludes and disclaims all implied warranties of merchantability, fitness for particular purpose, or any other warranty of quality of performance.

To the extent permitted by applicable law, this warranty does not extend to, and the user shall be solely responsible for, any loss or damage that results from the use of this product in any manner that is inconsistent with this label's directions, or cautions.

To the extent permitted by applicable law, user's exclusive remedy and ECOSTADT TECHNOLOGIES LLC's or seller's exclusive liability for any claim loss, damage, or injury resulting from the use or handling of this product, whether or not based in contract, negligence, strict liability in tort, or otherwise, shall be limited, at ECOSTADT TECHNOLOGIES LLC's option, to replacement, or repayment of the purchase price for, the quantity of product with respect to which damages are claimed. To the extent permitted by applicable law, ECOSTADT TECHNOLOGIES LLC or Seller will not be liable for special, indirect, or consequential damages resulting from the use or handling of this product.

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[Optional marketing claims, may be used on any panel]

- *Controls Insects, Mites and Nematodes.*
- *Insecticide, Miticide & Nematicide*
- *Broad Spectrum Control.*
- *Can be used the day of harvest.*
- *Rose and flower spray.*
- *Garden vegetable and Ornamental spray.*
- *Tomato and vegetable spray.*
- *Foliar and systemic application.*
- *This mode of action provides a preventive pest control approach in pest control programs*
- *DEFEAT 1.5 also acts as oviposition deterrent and thus pests do not prefer plants treated with the product. Repellency provides a preventive pest control approach to pest control programs and assists in integrated pest management efforts.*

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DEFEAT 1.5 (EPA Reg. No. 89152-E)
MASTER LABEL
Sub Label B: Residential/Homeowner Use

DEFEAT 1.5
AZADIRACHTIN BASED INSECTICIDE, MITICIDE AND NEMATICIDE

For Home and Garden Use

For controlling and repelling Insects such as aphids, armyworms, beetles, budworms, cutworms, fungus gnats, leafhoppers, leaf miners, leaf rollers, lepidopterous larvae, loopers, mushroom flies, sawflies, thrips, webworms, and whiteflies; and plant parasitic nematodes such as dagger, golden, and root knot nematodes.

ACTIVE INGREDIENT:	Azadirachtin*	1.50%
INERT INGREDIENTS:	<u>98.50%</u>
		100.00%

* Contains 0.14 lb (64 grams) of azadirachtin per gallon

KEEP OUT OF REACH OF CHILDREN
CAUTION

FIRST AID
If on skin or clothing: <ul style="list-style-type: none"> • 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.
If inhaled: <ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, and then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. Call your poison control center at 1-800-222-1222. For information on product, usage, call 1-888-858-7378, Seven days a week, 6:30 am to 4:30 pm Pacific Time. During other times, call the poison control center 1-800-222-1222.

FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY: Transportation: Chemtrec1-800-424-9300 Medical: Hazard information Services (H.I. S1) 800-228-5635, Extension 169.
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ECOSTADT TECHNOLOGIES LLC
2600 East Bidwell St, Suite 230
Folsom, CA 95630
Phone: 916-984-5800

Net Contents: 2, 4, 8, 16, 32 Oz,
1 Gallon
EPA Reg. No.: 89152-R
EPA Est. No.: 72806-OK- 001 or
88774-CA-001
Batch No.:

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if inhaled or absorbed through skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling. Avoid breathing spray mist. Remove contaminated clothing and wash clothing before use.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water, 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 disposing of equipment wash waters or rinsates. .

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.

PRODUCT DESCRIPTION

DEFEAT 1.5 is an emulsifiable concentrate containing 1.5 by weight azadirachtin. It has been evaluated on a wide variety of ornamental, forestry, and food crops. No phytotoxicity at recommended field rates has been observed. DEFEAT 1.5 is an effective repellent, anti-feedant and insect growth regulator. DEFEAT 1.5 is a repellent and anti-feedant and effectively stops larval and adult damage to plants. DEFEAT 1.5 is an insect growth regulator on immature insects and does not control adult insects...

MODE OF ACTION

DEFEAT 1.5 controls larval and adult feeding stages of insects through repellency and anti-feedant properties thus effectively stopping or minimizing feeding damage to plants.

DEFEAT 1.5 controls adult insects through oviposition deterrence. Insects do not prefer treated plants. This mode of action provides a preventive pest control approach in pest control programs.

DEFEAT 1.5 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.

APPLICATION INSTRUCTIONS

READ ALL DIRECTIONS AND PRECAUTIONS BEFORE USE

DEFEAT 1.5 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 45 fl oz (20 grams active ingredient) per acre per application.

MIXING: Shake well before mixing. Always use this product promptly after mixing with water. DEFEAT 1.5 will break down in the spray solution if not used within 8 hours. Never allow tank mix to stand overnight.

DEFEAT 1.5 APPLICATION TABLE FOR ALL INDOOR PLANTS, RESIDENTIAL GREENHOUSES, INTERIORSCAPES, RESIDENTIAL HYDROPONIC AND AEROPONIC GROWING SYSTEMS

Gallon of water	AMOUNT OF DEFEAT 1.5				APPLICATION INTERVAL
	0.02%	0.04%	0.08%	0.16%	
1 GALLON	0.80 ml (¹ / ₆ tsp)	1.5 ml (¹ / ₃ tsp)	3.0 ml (³ / ₅ tsp)	6.0 ml (1 ¹ / ₅ tsp)	7 – 14 days

5 GALLON	4.0 ml ($\frac{4}{5}$ tsp)	7.5 ml ($\frac{1}{6}$ tsp)	15.0 ml (3 tsp)	30.0 ml (6 tsp)	7 – 14 days
15 GALLON	12.0 ml ($2\frac{2}{5}$ tsp)	22.5 ml ($4\frac{1}{2}$ tsp)	45.0 ml (9 tsp)	90.0 ml (18 tsp)	7 – 14 days
20 GALLON	16.0 ml ($3\frac{1}{5}$ tsp)	30.0 ml (6 tsp)	60.0 ml (12 tsp)	120.0 ml (24 tsp)	7 – 14 days
25 GALLON	20.0 ml (4 tsp)	37.5 ml ($7\frac{1}{2}$ tsp)	75.0 ml (15 tsp)	150.0 ml (30 tsp)	7 – 14 days
50 GALLON	40.0 ml (8 tsp)	75.0 ml (15 tsp)	150.0 ml (30 tsp)	300.0 ml (60 tsp)	7 – 14 days

Use DEFEAT 1.5 in residential greenhouses, interiorscapes, residential hydroponics and aeroponics for the control of foliar pests, soil borne insect larvae, fungus gnats, nematodes Dilute DEFEAT 1.5 in the concentration of 0.02 to 0.16 % with water in recirculatory and hydroponic liquid system. Agitate the mixture until the product is completely dispersed. Use lower concentration (0.02%) for mild infestations and higher concentration (0.16%) for severe infestation. Do not exceed 45 oz/acre.

DEFEAT 1.5 APPLICATION TABLE FOR HOME & GARDENS DRENCH APPLICATIONS FOR INDOOR AND OUTDOOR PLANTS RESIDENTIAL GREENHOUSES, INTERIORSCAPES, HYDROPONIC AND AEROPONIC GROWING SYSTEMS

Gallon of water	AMOUNT OF DEFEAT 1.5				APPLICATION INTERVAL
	0.02%	0.04%	0.08%	0.16%	
1 GALLON	0.80 ml ($\frac{1}{6}$ tsp)	1.5 ml ($\frac{1}{3}$ tsp)	3.0 ml ($\frac{3}{5}$ tsp)	6.0 ml ($1\frac{1}{5}$ tsp)	7 – 14 days
5 GALLON	4.0 ml ($\frac{4}{5}$ tsp)	7.5 ml ($\frac{1}{6}$ tsp)	15.0 ml (3 tsp)	30.0 ml (6 tsp)	7 – 14 days
15 GALLON	12.0 ml ($2\frac{2}{5}$ tsp)	22.5 ml ($4\frac{1}{2}$ tsp)	45.0 ml (9 tsp)	90.0 ml (18 tsp)	7 – 14 days
20 GALLON	16.0 ml ($3\frac{1}{5}$ tsp)	30.0 ml (6 tsp)	60.0 ml (12 tsp)	120.0 ml (24 tsp)	7 – 14 days
25 GALLON	20.0 ml (4 tsp)	37.5 ml ($7\frac{1}{2}$ tsp)	75.0 ml (15 tsp)	150.0 ml (30 tsp)	7 – 14 days
50 GALLON	40.0 ml (8 tsp)	75.0 ml (15 tsp)	150.0 ml (30 tsp)	300.0 ml (60 tsp)	7 – 14 days

Drench soil in the pot with one (1) pint of finished product dilution per gallon of soil. Use lower concentration (0.02%) for mild infestations and higher concentration (0.16%) for severe infestation.

DEFEAT 1.5 APPLICATION RATES FOR GARDEN CROPS, VEGETABLES, HERBS, SPICES, FRUITS, BERRIES AND ORNAMENTALS

CROP	PESTS SUCH AS	DEFEAT 1.5 DILUTION RATE			FREQUENCY OF APPLICATION
		Per Quart water	One Gallon water	Five Gallon water	
Leafy Vegetables including but not limited to: Broccoli, Cabbage, Cauliflower, Collards, Endive, Kale, Lettuce, Spinach	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days
Root Vegetables including but not limited to: Beet, Carrot, Horseradish, Parsnip, Potato, Radish, Sweet potato, Turnip, Yam	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days
Fruiting Vegetables including but not limited to: Eggplant, Pepper, Tomatillo, Tomato	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days
Cucurbit Vegetables including but not limited to : Cucumber, Gourd, Muskmelon, Pumpkin, Squash, Watermelon, Cantaloupe, Casaba, Gherkins, Melons, Zucchini	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days
Legume Vegetables including but not limited to : Bean, Chickpea, Lentil, Pea	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days
Bulb Vegetables including but not limited to: Garlic, Onion, Shallot	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days
Berries including but not limited to: Blackberry,	Leafrollers, Loopers,	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days

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Blueberry, Raspberry, Strawberry, Gooseberry	Armyworms, Whiteflies, Aphids, Thrips, Mites				
Herbs and Spices including but not limited to: Chive, Dill, Fennel, Mustard, Sage, Basil, Coriander, Peppermint	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days
Nut trees including but not limited to: Almond, Walnut, Pecan, Pistachio	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days
Pome fruits including but not limited to: Apple, Pear (check plant safety for Comice Pear variety before application)	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days
Stone fruits including but not limited to: Apricot, Cherry, Nectarine, Peach, Plum	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days
Citrus fruits including but not limited to: Grapefruit, Lemon, Orange	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days
Ornamental Plants including but not limited to: Chrysanthemum, Coleus, Roses, Poinsettia	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days
Ornamental Trees & Shrubs	Leafrollers, Loopers, Armyworms, Whiteflies, Aphids, Thrips, Mites	1.6 ml ($\frac{1}{3}$ tsp)	6 ml ($1\frac{1}{5}$ tsp)	30 ml (6 tsp)	7 – 14 days

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STORAGE AND DISPOSAL

Store in a cool dry place out of reach of children and pets and away from direct sunlight, windows, flames and other sources of heat or ignitions. Keep containers tightly closed and in original containers when not in use. Do not store product such that it is exposed to ultraviolet light (sunlight) or moisture. Non-refillable container. Do not reuse or refill this container. **If empty:** Place in trash or offer for recycling if available. **If partly filled:** Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

IMPORTANT: PLEASE READ BEFORE USE

To the extent permitted by applicable law, by using this product, the user accepts the following: LIMITED WARRANTY:

ECOSTADT TECHNOLOGIES LLC warrants that (a) this product conforms to the chemical description on its label; (b) this product is reasonably fit for the purposes stated on its label, subject to the inherent risks referred to herein, when used in accordance with its directions; and (c) that the directions, cautions and other statements on this label are based upon responsible expert evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and plants, and upon reports of field experience. Testing has not been performed on all varieties of food crops, and plants, in all states, or under all application, weather and crop conditions. To the extent permitted by applicable law, there are no express warranties other than those set forth herein. ECOSTADT TECHNOLOGIES LLC neither makes nor intends, nor does it authorize any agent or representative to make, any other warranty, express or implied. To the extent permitted by applicable law, ECOSTADT TECHNOLOGIES LLC expressly excludes and disclaims all implied warranties of merchantability, fitness for particular purpose, or any other warranty of quality of performance.

To the extent permitted by applicable law, this warranty does not extend to, and the user shall be solely responsible for, any loss or damage that results from the use of this product in any manner that is inconsistent with this label's directions, or cautions.

To the extent permitted by applicable law, user's exclusive remedy and ECOSTADT TECHNOLOGIES LLC's or seller's exclusive liability for any claim loss, damage, or injury resulting from the use or handling of this product, whether or not based in contract, negligence, strict liability in tort, or otherwise, shall be limited, at ECOSTADT TECHNOLOGIES LLC's option, to replacement, or repayment of the purchase price for, the quantity of product with respect to which damages are claimed. To the extent permitted by applicable law, ECOSTADT TECHNOLOGIES LLC or Seller shall in no event be liable for special, indirect, or consequential damages resulting from the use or handling of this product.

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[Optional marketing claims, may be used on any panel]

- *Controls Insects, Mites and Nematodes.*
- *Insecticide, Miticide & Nematicide*
- *Broad Spectrum Control.*
- *Can be used the day of harvest.*
- *Rose and flower spray.*
- *Garden vegetable and Ornamental spray.*
- *Tomato and vegetable spray.*
- *Foliar and systemic application.*
- *This mode of action provides a preventive pest control approach in pest control programs.*
- *DEFEAT 1.5 also acts as an oviposition deterrent and thus pests do not prefer plants treated with the product. Repellency provides a preventive pest control approach to pest control programs and assists in integrated pest management efforts*