BoteGHA® ES

EMULSIFIABLE SUSPENSION MYCOINSECTICIDE

ACTIVE INGREDIENT:	
Beauveria bassiana strain GHA[†]	11.30%
OTHER INGREDIENTS[‡]:	88.70%
Total:	100.00%

[†]Contains a minimum of 1 x 10^{13} viable spores per quart of product.
[‡]Contains petroleum distillates.

KEEP OUT OF REACH OF CHILDREN

CAUTION

Refer to inside of label booklet for additional precautionary information and Directions for Use including First Aid and Storage and Disposal.
Store between 40°F and 85°F
Shake Well

MANUFACTURED BY:
Certis USA LLC
9145 Guilford Road, Suite 175
Columbia MD 21046

EPA Reg. No.: 82074-1
EPA Est. No.: 70051-MT-1
Lot Number: _____
Net Contents: 1 Gallon

ESL20220422
Ver. 20220511

This is a Specimen Label. It may not reflect the most-recent approved label for use in your state. Always refer to the label on the product packaging for approved use instructions. Please contact your Certis sales representative for more information.

FIRST AID	
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.
If swallowed	• Immediately call a poison control center or doctor. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give **any** liquid to the person. • Do not give anything by mouth to an unconscious person.
HOTLINE NUMBER Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-255-3924 (ChemTel) for emergency medical treatment information.	
NOTE TO PHYSICIAN Contains petroleum distillates. Vomiting may cause aspiration pneumonia.	

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

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

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Protective eyewear
- Chemical-resistant gloves made of barrier laminate, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, or Viton ≥ 14 mils
- Shoes plus socks

Mixers/loaders and applicators must wear a minimum of a NIOSH-approved particulate filtering facepiece respirator with any R or P filter; OR a NIOSH-approved elastomeric particulate respirator with any R or P filter; OR a NIOSH-approved powered air-purifying respirator with an HE filter. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product is potentially pathogenic to honeybees. Avoid applying to areas where honeybees are actively foraging or around beehives. This product may be toxic to fish. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

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. Do not contaminate water when disposing of equipment washwater or rinsate.

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 State or Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box apply only to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

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
- Chemical-resistant gloves made of barrier laminate, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, or Viton ≥ 14 mils
- 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 Standard 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.

Keep unprotected persons out of treated areas until sprays have dried.

PRODUCT INFORMATION

BoteGHA® ES contains live spores of the entomopathogenic fungus, *Beauveria bassiana* strain GHA. This ubiquitous soilborne fungus is a disease organism of corn borers, other insects, and mites. Spores are alive and subject to harm by storage at high temperatures or contact with water for more than 24 hours. See STORAGE AND DISPOSAL instructions on the container label.

May be applied by air. Suitable for use with ultra low-volume application equipment.

MODE OF ACTION AND APPLICATION TIMING

BoteGHA® ES acts by contact. Fungal spores attach to the pest, germinate, and penetrate through the cuticle. The fungus then grows rapidly within the pest, causing mortality.

Begin treatment of crops at the first appearance of pests. Typically, it takes 7-10 days after the first spray to see control. Application rates, frequency, spray coverage and pest numbers impact the speed at which acceptable control is achieved. BoteGHA® ES is most effective when used early, before high pest populations develop. Reapply as indicated on this label under a pest management program that includes close scouting. Intense pest outbreaks may require combination of BoteGHA® ES with a compatible insecticide/miticide.

Beauveria bassiana occurs in soil in close association with corn plants where it infects corn borers. When BoteGHA® ES is applied to corn early in the season, the fungus persists in association with corn plants providing season long reduction in corn borer damage.

Contact your sales representative or dealer for specific information on compatible insecticides/miticides.

PRE-HARVEST INTERVAL (PHI)

This product can be applied up to the day of harvest (0-day PHI).

MIXING AND APPLICATION

SHAKE WELL BEFORE USING. Apply this product using hand-held, ground and/or aerial spray equipment; low-volume application equipment and chemigation (**follow specific directions for chemigation in this booklet**). This product contains emulsifiers and mixes readily in water. Mix well by external mixing, in-tank mixing, or pump circulation to form an emulsion. To mix, fill spray tank with half the desired amount of water and start agitation. Shake product to suspend spores. Then, with agitator running, slowly add desired quantity of product to spray tank. Add remainder of desired amount of water. Continue agitation throughout loading and spraying. Triple rinse empty container with water and add rinse water to spray tank. Do not mix more product than needed for that day. Do not mix product the day before application.

Contact your sales representative or dealer for instructions about specific crops, pests, and spray equipment.

APPLICATION FREQUENCY

Apply at 5- to 10-day intervals for low to normal pest pressure. For high pest pressure, especially whiteflies and aphids, apply at 2- to 5-day intervals. Repeat applications for as long as pest pressure persists. There is no limit on the number of applications or total amount of product that can be applied in one season.

PHYTOTOXICITY

This product has demonstrated plant safety but has not been tested on all plant varieties or in all tank mixes. Use caution when making applications to open blooms, especially on varieties known to be sensitive. Test product on a small number of plants to check for potential damage before applying to larger number of plants. **Do not apply on poinsettias after bract formation.**

TANK MIX COMPATIBILITY

This product is physically and biologically compatible with a wide range of insecticides and spray adjuvants. It is compatible with some fungicides in tank mixtures. Fungicides may kill the spores. This product can be mixed and used with other pesticides only in accordance with the most restrictive label limitations and precautions. This product cannot be mixed with any product containing a label prohibition against such mixing. No label application rates may be exceeded.

Adjuvants: This product is designed for application without additional wetting agents and spreaders. If adjuvants are needed for some other reason, contact your sales representative or dealer for specific instructions. Some wetting agents and spreaders kill the spores (*i.e.*, the active ingredient in this product) or contribute to poor mixing and spray problems.

Compatibility with Chemical Insecticides: This product is compatible with most chemical insecticides. However, some insecticide formulations can kill the fungal spores, the active ingredient in this product. If you are going to use this product in combination with other pesticides, contact your sales representative or dealer for specific information. In all cases, pesticides must be used in accordance with their labels.

Compatibility with Fungicides: This product is compatible in tank mix with some fungicides. Contact your sales representative or dealer for specific instructions on using this product with fungicides.

FOOD CROPS

CROP GROUP 1: ROOT AND TUBER VEGETABLES

Arracacha; arrowroot; artichoke, Chinese; artichoke, Jerusalem; beet, garden; beet, sugar; burdock, edible; canna, edible; carrot; cassava, bitter and sweet (manioc, yuca); celeriac (celery root); chayote (root); chervil, turnip-rooted; chicory; chufa; dasheen (taro); ginger; ginseng; horseradish; leren; parsley, turnip-rooted; parsnip; potato; radish; radish, oriental (daikon); rutabaga; salsify (oyster plant); salsify, black; salsify, Spanish; skirret; sweet potato; tanier (cocoyam); turmeric; turnip; yam bean (jicama, manioc pea); yam, true

CROP GROUP 3-07: BULB VEGETABLES

Chive, fresh leaves; chive, Chinese, fresh leaves; daylily, bulb; elegans hosta; fritillaria, bulb; fritillaria, leaves; garlic, bulb; garlic, great-headed, bulb; garlic, serpent, bulb; kurrat (Egyptian leek); lady's leek; leek; leek, wild; lily, bulb; onion, Beltsville bunching; onion, bulb; onion, Chinese, bulb; onion, fresh; onion, green; onion, macrostem; onion, pearl; onion, potato, bulb; onion, tree, tops; onion, Welsh, tops; shallot, bulb; shallot, fresh leaves; cultivars, varieties, and/or hybrids of these

CROP GROUP 4-16: LEAFY VEGETABLES

Amaranth, Chinese (Chinese spinach, tampala, yin choy); amaranth, leafy; arugula; aster, Indian; blackjack; broccoli, Chinese (gai lon); broccoli raab (rapini); cabbage, abyssinian; cabbage, Chinese, bok choy; cabbage, seakale; cat's whiskers; cham-chwi; cham-na-mul; chervil, fresh leaves; chipilin; chrysanthemum, garland; cilantro, fresh leaves; collards; corn salad; cosmos; cress, garden; cress, upland; dandelion, leaves; dang-gwi, leaves; dillweed; dock; dol-nam-mul; ebolo; endive; escarole; fameflower (purslane); feather cockscomb (celosia); good king henry; hanover salad (kale); huauzontle; jute, leaves; kale; lettuce, bitter; lettuce, head; lettuce, leaf; maca, leaves; mizuna (Japanese mustard greens); mustard greens; orach; parsley, fresh leaves; plantain, buckhorn; primrose, English; purslane, garden; purslane, winter; radicchio; radish, leaves; rape greens; rocket, wild; shepherd's purse; spinach; spinach, Malabar; spinach, New Zealand; spinach, tanier; Swiss chard (spinach beet); turnip greens; violet, Chinese, leaves; watercress; cultivars, varieties, and hybrids of these commodities

CROP GROUP 5-16: *BRASSICA* HEAD AND STEM VEGETABLE

Broccoli; Brussels sprouts; cabbage; cabbage, Chinese, napa; cauliflower; cultivars, varieties, and hybrids of these commodities

CROP GROUP 6: LEGUME VEGETABLES (SUCCULENT OR DRIED)

Bean, *Lupinus* spp. (including grain lupin, sweet lupin, white lupin, and white sweet lupin); bean, *Phaseolus* spp. (including field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean); bean, *Vigna* spp. (including adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, Crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlong bean); broad bean (fava bean); chickpea (garbanzo bean); guar; jackbean; lablab bean (hyacinth bean); lentil; pea (including dwarf pea, edible-pod pea, English pea, field pea, garden pea, green pea, snow pea, sugar snap pea); pigeon pea; soybean (edamame); soybean (immature seed); sword bean

CROP GROUP 8-10: FRUITING VEGETABLES

African eggplant; bush tomato; cocona; currant tomato; eggplant; garden huckleberry; goji berry; groundcherry; martynia (cat's claw, iceplant, tiger's claw); naranjilla; okra; pea eggplant; pepino; pepper, bell (including paprika); pepper, nonbell (including pimento); roselle (hibiscus); scarlet eggplant; sunberry (wonderberry); tomatillo; tomato; tree tomato; cultivars, varieties and/or hybrids of these

CROP GROUP 9: CUCURBIT VEGETABLES

Chayote (fruit); Chinese waxgourd (Chinese preserving melon, fuzzy gourd, mao gwa); citron melon; cucumber; gherkin; gourd, edible (includes hyotan, cucuzza, hechima, Chinese okra); *Momordica* spp. (includes balsam apple, balsam pear, bittermelon, Chinese cucumber); muskmelon (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon); pumpkin; squash, summer (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini); squash, winter (includes butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash); watermelon

CROP GROUP 10-10: CITRUS FRUIT

Australian desert lime; Australian finger lime; Australian round lime; Brown River finger lime; calamondin; citron; citrus hybrids (chironja, orangelo, grapefruit-orange hybrid); grapefruit; Japanese summer grapefruit; kumquat; lemon; lime; Mediterranean mandarin; mount white lime; New Guinea wild lime; orange, sour; orange, sweet;

pummelo; Russell River lime; satsuma mandarin; sweet lime; tachibana orange; Tahiti lime; tangelo; tangerine (mandarin); tangor; trifoliate orange; uniq fruit; cultivars, varieties, and/or hybrids of these

CROP GROUP 11-10: POME FRUIT

Apple; azarole; crabapple; loquat; mayhaw; medlar; pear; pear, Asian; quince; quince, Chinese; quince, Japanese; tejocote; cultivars, varieties, and/or hybrids of these

CROP GROUP 12-12: STONE FRUIT

Apricot; apricot, Japanese; capulin; cherry, black; cherry, Nanking; cherry, sweet; cherry, tart; Jujube, Chinese; nectarine; peach; plum; plum, American; plum, beach; plum, Canada; plum, cherry; plum, Chickasaw; plum, Damson; plum, Japanese; plum, Klamath; plum, prune; plumcot (pluot); sloe; cultivars, varieties, and/or hybrids of these

CROP GROUP 13-07: BERRY AND SMALL FRUIT

Amur river grape; aronia berry; bayberry (*Myrica* spp.); bearberry; bilberry; blackberry (including Andean blackberry, arctic blackberry, bingleberry, black satin berry, boysenberry, brombeere, California blackberry, Chesterberry, Cherokee blackberry, Cheyenne blackberry, common blackberry, coryberry, darrowberry, dewberry, Dirksen thornless berry, evergreen blackberry, Himalayaberry, hullberry, lavacaberry, loganberry, lowberry, Lucretiaberry, mammoth blackberry, marionberry, mora, mures deronce, nectarberry, Northern dewberry, olallieberry, Oregon evergreen berry, phenomenalberry, rangeberry, ravenberry, rossberry, Shawnee blackberry, Southern dewberry, tayberry, youngberry, zarzamora, and cultivars, varieties and/or hybrids of these); blueberry, highbush; blueberry, lowbush; buffalo currant; buffaloberry; che; Chilean guava; chokecherry; cloudberry; cranberry; cranberry, highbush; currant, black; currant, red; elderberry; European barberry; gooseberry; grape; honeysuckle, edible; huckleberry; jostaberry; Juneberry (Saskatoon berry); kiwifruit, fuzzy; kiwifruit, hardy; lingonberry; maypop; mountain pepper berries; mulberry; muntries; native currant; partridgeberry; phalsa; pincherry; raspberry, black and red; riberry; salal; schisandra berry; sea buckthorn; serviceberry; strawberry; wild raspberry; cultivars, varieties, and/or hybrids of these

CROP GROUP 14-12: TREE NUTS

African nut-tree; almond; beechnut; Brazil nut; Brazilian pine; bunya; bur oak; butternut; Cajou nut; candlenut; cashew; chestnut; chinquapin; coconut; coquito nut; dika nut; ginkgo; Guiana chestnut; hazelnut (filbert); heartnut; hickory nut; Japanese horse-chestnut; macadamia nut (bush nut); mongongo nut; monkey-pot; monkey puzzle nut; Okari nut; Pachira nut; peach palm nut; pecan; pequi; Pili nut; pine nut; pistachio; Sapucaia nut; tropical almond; walnut, black; walnut, English; yellowhorn; cultivars, varieties, and/or hybrids of these

CROP GROUP 15: CEREAL GRAINS

Barley; buckwheat; corn (all including field, seed, and sweet; fresh market and grain); millet, pearl; millet, proso; oats; popcorn; rice; rye; sorghum (milo); teosinte; triticale; wheat; wild rice

CROP GROUP 16: FORAGE, FODDER, AND STRAW OF CEREAL GRAINS

Forage, fodder, stover and straw of: barley; buckwheat; corn; millet, pearl; millet, proso; oats; popcorn; rice; rye; sorghum (milo); teosinte; triticale; wheat; wild rice

CROP GROUP 17: GRASS FORAGE, FODDER, AND HAY

Forage, fodder, stover, and hay of any grass, *Gramineae/Poaceae* family (either green or cured) except sugarcane and those included in the cereal grains group, that will be fed to or grazed by livestock, all pasture and range grasses, and grasses grown for hay or silage

CROP GROUP 18: NONGRASS ANIMAL FEEDS (FORAGE, FODDER, STRAW, AND HAY)

Alfalfa; bean, velvet; clover; kudzu; lespedeza; lupin; sainfoin; trefoil; vetch; vetch, crown; vetch, milk

CROP GROUP 20: OILSEED

Borage; calendula; castor oil plant; Chinese tallowtree; cottonseed; crambe; cuphea; echium; euphorbia; evening primrose; flax seed; gold of pleasure; hare's ear mustard; jojoba; lesquerella; lunaria; meadowfoam; milkweed; mustard seed; niger seed; oil radish (Chinese radish, daikon, Japanese radish, lobok); poppy seed; rapeseed (canola); rose hip; safflower; sesame; stokes aster; sunflower; sweet rocket; tallowwood; tea oil plant; vernonia; cultivars, varieties, and/or hybrids of these

CROP GROUP 21: EDIBLE FUNGI*

Blewitt; bunashimeji; Chinese mushroom; enoki; hime-matsutake; hirmeola; maitake; morel; nameko; net bearing Dictyophora; oyster mushroom; pom pom; reishi mushroom; Rodman's agaricus; Shiitake mushroom; shimeji; stropharia; truffle; white button mushroom; white jelly fungi

***Not for use in California.**

CROP GROUP 22: STALK, STEM AND LEAF PETIOLE VEGETABLES

Agave; aloe vera; asparagus; bamboo, shoots; cardoon; celery; celery, Chinese; celtuce; fennel, Florence, fresh leaves and stalk; fern, edible, fiddlehead; fuki; kale, sea; kohlrabi; palm hearts; prickly pear, pads; prickly pear, Texas, pads; rhubarb; udo; zuiki; cultivars, varieties, and hybrids of these commodities

CROP GROUP 23: TROPICAL AND SUBTROPICAL FRUIT, EDIBLE PEEL

Açaí; acerola; achachairú; African plum; agritos; almondette; ambarella; apak palm; appleberry; arazá; arbutus berry; babaco; bacaba palm; bacaba-de-leque; bayberry, red; bignay; bilimbi; borojó; breadnut; cabeluda; cajou, fruit; cambucá; carandas-plum; carob; cashew apple; Ceylon iron wood; Ceylon olive; cherry-of-the-Rio-Grande; Chinese olive, black; Chinese olive, white; chirauli-nut; ciruela verde; cocoplum; date; Davidson's plum; desert-date; doum palm coconut; false sandalwood; feijoa; fig; fragrant manjack; gooseberry, Abyssinian; gooseberry, Ceylon; gooseberry, Indian; gooseberry, otaheite; governor's plum; grumichama; guabiroba; guava; guava berry; guava, Brazilian; guava, cattley; guava, Costa Rican; guava, Para; guava, purple strawberry; guava, yellow strawberry; guayabillo; illawarra plum; imbé; imbu; Indian-plum; jaboticaba; Jamaica-cherry; jambolan; jelly palm; jujube, Indian; kaffir-plum; kakadu plum; kapundung; karanda; kwai muk; lemon aspen; mangaba; marian plum; mombin, Malayan; mombin, purple; mombin, yellow; monkeyfruit; monos plum; mountain cherry; nance; natal plum; noni; olive; papaya, mountain; patauá; peach palm, fruit; persimmon, black; persimmon, Japanese; pitomba; plum-of-Martinique; pomerac; rambai; rose apple; rukam; rumberry; sea grape; sentul; sete-capotes; silver aspen; starfruit (carambola, jalea); Surinam cherry; tamarind; uvalha; water apple; water pear; water berry; wax jambu; cultivars, varieties, and hybrids of these commodities

CROP GROUP 24: TROPICAL AND SUBPROPICAL FRUIT, INEDIBLE PEEL

Abiu; aisen; akee apple; atemoya; avocado; avocado, Guatemalan; avocado, Mexican; avocado, West Indian; bacury; bael fruit; banana; banana, dwarf; binjai; biriba; breadfruit; Burmese grape; canistel; cat's-eyes; champedak; cherimoya; cupuacu; custard apple; dragon fruit; durian; elephant-apple; etambe; granadilla; granadilla, giant; ilama; inga; jackfruit; jatoba; karuka; kei apple; langsat; lanjut; longan; lucuma; lychee; mabolo; madras-thorn; mammy-apple; manduro; mango; mango, horse; mango, Saipan; mangosteen; marang; marmaladebox; matisia; mesquite; mongongo, fruit; monkey-bread-tree; monstera; nicobar-breadfruit; paho; pandanus; papaya; passionflower, winged-stem; passionfruit; passionfruit, banana; passionfruit, purple; passionfruit, yellow; pawpaw, common; pawpaw, small-flower; pelipisan; pequi; pequia; persimmon, American; pineapple; pitahaya; pitaya; pitaya, amarillo; pitaya, roja; pitaya, yellow; plantain; pomegranate; poshte; prickly pear, fruit; prickly pear, Texas, fruit; pulasan; quandong; rambutan; saguaro; sapodilla; sapote, black; sapote, green; sapote, mamey; sapote, white; sataw; satinleaf; screw-pine; Sierra Leone-tamarind; soncoya; soursop; Spanish lime; star apple; sugar apple; sun sapote; tamarind-of-the-Indies; velvet tamarind; wampi; white star apple; wild loquat; cultivars, varieties, and hybrids of these commodities

CROP GROUP 25: HERBS (INCLUDING FRESH AND DRIED LEAVES EXCEPT WHERE NOTED)

Agrimony; amla; angelica; angelica, dahurian; applemint; avarum; balloon pea; balm (lemon balm); barrenwort; basil (including American, Greek, holy, lemon, Russian); bay; bearberry; bisongrass; blue mallow; boneset; borage; borage, Indian; burnet (garden and salad); butterbur; calamint (large-flower and lesser); calendula; camomile (chamomile) (German and Roman); caraway; cat's claw; catnip; catnip, Japanese; celandine, greater; celandine, lesser; celery, dried leaves; centaury; chaste tree; chaste tree, Chinese; chervil, dried leaves; Chinese blackberry; Chinese foxglove; chive, dried leaves; chive, Chinese, dried leaves; cicely, sweet; clary; coriander, Bolivian; coriander, Vietnamese; costmary; creat; culantro; curry leaf; curryplant; cut leaf; damiana; dillweed, dried leaves; dokudami; echinacea; epazote; Eucommia; evening primrose; eyebright; fennel, common; fennel, Florence, dried leaves; fennel, Spanish; fenugreek; feverfew; field pennycress; flowers, edible; fumitory; galbanum; galega; gambir; geranium (lemon and rose); germander, golden; goldenrod, European; goldenseal; gotu kola; greater periwinkle; guayusa; gumweed; gymnema; gypsywort; hawthorn; heal-all; hemp nettle; honewort; honeybush; horehound; horsemint; horsetail; hyssop; hyssop, anise; Indian tobacco; ironwort; ivy; Jamaica dogwood; jasmine; Labrador tea; lavender; lemon verbena; lemongrass; lovage; love-in-a-mist; mamaki; marigold (African, Aztec, French, Irish lace, licorice, Mexican mint, and signet); marjoram (pot and sweet); marshmallow; meadowsweet; mint; mint, corn; mint, Korean; monarda; moringa; motherwort; mountainmint (clustered, hoary, Virginia, whorled); mugwort; mugwort, white; mulberry, white; mullein; mustard, hedge; nasturtium (bush and garden); nettle, stinging; oregano; oregano, Mexican; oregano, Puerto Rico; Oswego tea; pandan leaf; pansy; paracress; parsley, dried; partridge berry; patchouli; pennyroyal; pepper leaf, black; peppermint; perilla; pill bearing spurge; pipsissewa; plantain, common; rooibos; rose; rosemary; sage; sage, Greek; sage, Spanish; sage, white; savory, summer; savory, winter; senna; Siberian fir; skullcap; small flower willow head; sorrel (French and garden); southernwood; spearmint (including Scotch); spilanthes; spotted beebalm; St John's Wort; stevia; stoneroot; swamp leaf; tansy; tarragon; thuja; thyme (creeping, lemon, mastic); toon, Chinese; toothed clubmoss; trailing arbutus; vasaka; verbena, blue; veronica; violet; watermint; waterpepper; wild bergamot; wintergreen; wood betony; woodruff; wormwood; wormwood, Roman; yarrow; yellow gentian; yerba santa; yomogi; cultivars, varieties, and hybrids of these commodities.

CROP GROUP 26: SPICES

Ajowan, seed; alder buckhorn; allspice; ambrette, seed; amla, seed; angelica, dahurian, seed; angelica, seed; angostura, bark; anise pepper; anise, seed (sweet Alice); anise, star; annatto, seed; asafoetida; ashwagandha, fruit; autumn crocus; balsam, Peruvian; barberry, bark; Batavia-cassia (bark and fruit); beleric myrobalan; betel vine; birch, bark; bisnaga, seed; bitterwood; black bread weed; bloodroot; blue mallee; blushwood, seed; boldo, leaf; buchu; calamus root; candlebush; canella, bark; caper buds; caper spurge, seed; caraway, black; caraway, fruit; cardamom, black; cardamom, Ethiopian; cardamom, green; cardamom, Nepal; cardamom-amomum; cascara sagrada; cassia (bark and fruit); cassia, Chinese (bark and fruit); cat's claw, bark; catechu, bark; celery, seed; chaste tree, berry; chaste tree, Chinese, roots; chervil, seed; Chinese hawthorn; Chinese nutmeg tree; Chinese wineberry, fruit; Chinese-pepper; cinnamon (bark and fruit); cinnamon, Saigon (bark and fruit); clove buds; clusterleaf; comfrey; copaiba; coptis; coriander (fruit and seed; cilantro); cotton, bark; crampbark; cubeb, seed; culantro, seed; culvers root; cumin; cumin, black; dill, seed; dorrigo pepper (berry and leaf); dragon blood; echinacea, seed; epimedium; eucalyptus; Eucommia, bark; European beech; felty germander; fennel flower, seed; fennel, common (fruit and seed); fennel, Florence (fruit and seed); fenugreek, seed; fingerroot; flame lily, seed; frankincense; frankincense, Indian; galbanum, resin; gambooge; grains of paradise; grains of Selim; guaiac; guarana; guggul; gum arabic; gum ghatti; gum karaya; gum tragacanth; haw, black; honewort, seed; imperatoria; Indian tobacco, seed; iva; jalap; Jamaica dogwood, bark; juniper berry; kaffir lime, leaf; kewra; kokam; linden, leaf; lovage, seed; mace; magnolia, bark; mahaleb; malabar cardamom; malabar-tamarind; malabathrum; mastic; micromeria, white; milk thistle; mioga; miracle fruit; mistletoe; mojave yucca; muira puama; mustard (including black, brown, seed, white); myrrh; myrrh, bisabol; myrtle, anise; myrtle, leaf; myrtle, lemon; nasturtium, pods (including bush, garden); nettle, stinging, seed; nutmeg; osha; pepper, black; pepper, Indian long; pepper, Javanese long; pepper, leaf; pepper, pink; pepper, Sichuan; pepper, white; pepperbush (berry and leaf); peppercorn, green; peppertree (including Peruvian); perilla, seed; phellodendron; pine, maritime; poppy, seed; prickly ash, Chinese; prickly ash, Southern, bark; pygeum; qing hua jiao; quassia, bark; quebracho, bark; quillaja; quinine; rauwolfia, bark; resin spurge; rue; saffron crocus; sandalwood, seed; sassfras (bark and leaf); saunders, red; saw palmetto; sesame, seed; silktree, bark; simaruba, bark; skunk cabbage, root;

slippery elm; stemona, root; suma; sumac, fragrant; sumac, smooth, leaf; taheebo, bark; tamarind, seed; Tasmanian pepper (berry and leaf); threeleaf caper; tsaoko; vanilla; wattleseed; white willow; witch hazel; yaw root; yellow gentian, roots; yohimbe; cultivars, varieties, and hybrids of these commodities

MISCELLANEOUS CROPS (NO CROP GROUP)

Artichoke, globe; cacao*; chaya (tree spinach)*; cotton; hemp; hops; Kalamungay (*Moringa oleifera*)*; kukui*; peanut; Queen sago*; sugarcane; tea (black, white, green); tobacco; water chestnut

***Not for use in California.**

NON-FOOD CROPS, INCLUDING TURF

FORESTRY

Trees and conifers; tree and forest seedlings; woody ornamentals

TURF (INCLUDING LAWN AND SOD TURFGRASSES)

Bermuda grass; bluegrass; fescue; St. Augustine grass; zoysia grass

APPLICATION INSTRUCTIONS

MUSHROOM HOUSES*

MUSHROOMS (ALL VARIETIES)

APPLICATION RATES (PRODUCT PER SPRAY VOLUME):

- Mushroom flies, Phorid flies (*Megaselia* spp.): ..... 1 – 2 qt/100 gal

APPLICATION INSTRUCTIONS

Apply 1 – 2 quarts of this product per 100 gallons of water (2 – 4 teaspoons of product per gallon of water). Apply between 25 and 50 gallons of this solution per 1,000 ft^2 of bed space. Apply as needed to the compost or casing.

Uniform distribution over the surface of the substrate and casing layer is essential for best results. Apply in enough water volume to move the material into the compost and casing layer, where it can contact the insect. Do not use chlorinated water.

COMPOST

Spray or sprinkle on the surface of compost at the time of spawning and thoroughly incorporate using a spawning machine or other suitable mechanical means.

CASING

Make applications at casing and prior to each break (flush) or every 10 days starting at casing.

***Not for use in California.**

FOOD CROPS GROWN OUTDOORS, RANGELAND, IMPROVED PASTURES, AND FORESTRY

LISTED CROPS EXCEPT CORN

APPLICATION RATES (PRODUCT PER ACRE):

- All Listed Pests (except as specified below):..... ¼ – 1 qt
- Diamondback moth: ..... ½ – 1 qt
- Imported cabbage worm: ..... ½ – 1 qt
- Cabbage looper: .....1 qt
- Colorado potato beetle: ..... ½ – 1 qt
- Chinese rose beetle (Hawaii field crops only)..... ½ – 1 qt
- High insect pressure and/or dense foliage: ..... up to 3 qt

GROUND APPLICATION

Apply in sufficient water to thoroughly cover infested foliage, typically 5 to 100 gallons of water per acre. Final spray volume may be up to 400 gallons per acre. Water volume depends on spray equipment, crop canopy and target pest. **SPRAY TO WET BUT AVOID RUNOFF**.

Apply up to a maximum of 3 quarts of product per acre for high pest pressure and/or dense foliage.

AERIAL APPLICATION

Apply in sufficient water to thoroughly cover infested foliage. For best results, apply in 5 - 10 gallons of water per acre. Do not apply in less than 2 gallons of water per acre.

CHEMIGATION

This product can be applied through drip (trickle and microjet) systems; or overhead sprinkler systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move. Do not apply this product through any other type of irrigation system. Apply product undiluted (neat) or diluted for injection flow rate and irrigation volume. For best results, use one-part water to one-part product. If product is diluted, supply tank must be agitated to thoroughly mix product in water. Add water to supply tank, start agitation, and then add product. Continue supply tank agitation during chemigation cycle to maintain uniform emulsion. Supply tank agitation is not necessary if product is used without dilution. Shake well to suspend spores before adding product to supply tank. Use contents of supply tank within one day. Refer to the section entitled “Chemigation Instructions” for detailed instructions.

LEAF-FEEDING LEPIDOPTERA

FOR USE AGAINST DIAMONDBACK MOTH, IMPORTED CABBAGE WORM AND CABBAGE LOOPER

This product can be used alone or in a tank mix with *Bacillus thuringiensis* (vars. *kurstaki, aizawai*) to control these insects in accordance with the more restrictive of label limitations and precautions. Do not exceed label application rates. This product cannot be mixed with any product containing a label prohibition against such mixing. The tank mix provides control of later instars (3rd to 4th) and aids in the management of resistant populations. For additional information, contact your sales representative or dealer.

LEAF-FEEDING BEETLES

FOR USE AGAINST COLORADO POTATO BEETLE

This product can be used alone or in a tank mix with *Bacillus thuringiensis* (var. *tenebrionis*) to control Colorado potato beetle in accordance with the more restrictive of label limitations and precautions. Do not exceed label application rates. This product cannot be mixed with any product containing a label prohibition against such mixing. The tank mix provides control and aids in the management of resistant populations. For additional information, contact your sales representative or dealer.

SCARAB BEETLES

FOR USE AGAINST CHINESE ROSE BEETLE (HAWAII ONLY)

This product can be used to suppress Chinese rose beetle after transplanting listed field crops, such as cacao, in Hawaii. Treat plants right before the beetles emerge at dusk.

CORN

APPLICATION RATE (PRODUCT PER ACRE):

- All Listed Pests: .....4 fl oz (⅛ qt)

GROUND APPLICATION

Apply with sufficient water to provide thorough coverage. Direct spray over row to obtain optimal coverage in whorl and leaf axils. The amount of water will depend on spray equipment, crop size, and local conditions. Generally, a minimum of 10 gallons of spray volume per acre is necessary to obtain adequate coverage.

AERIAL APPLICATION

Apply with sufficient water to provide thorough coverage. For best results, apply in 5 – 10 gallons of water per acre. Do not apply in less than 2 gallons of water per acre.

CHEMIGATION

This product can be applied through drip (trickle and microjet) systems; or overhead sprinkler systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move. Do not apply this product through any other type of irrigation system. Apply undiluted (neat) or diluted for injection flow rate and irrigation volume. For best results, use one-part water to one-part product. If product is diluted, supply tank must be agitated to thoroughly mix product in water. Add water to supply tank, start agitation, and then add product. Continue supply tank agitation during chemigation cycle to maintain uniform emulsion. Supply tank agitation is not necessary if product is used without dilution. Shake well to suspend spores before adding product to supply tank. Use contents of supply tank within one day. Refer to the section entitled “Chemigation Instructions” for detailed instructions.

APPLICATION TIMING FOR CORN

Apply 2½ gallons of product per 80 acres. Apply to corn when plants are 12-16 inches high (V6-V8 stage). A single application is sufficient to establish *Beauveria bassiana* association with corn plants. A second application prior to second generation corn borer flight may further reduce damage from corn borers.

TURF AND ORCHARDS

SOIL-DWELLING INSECTS

For most soil applications, apply 2 - 8 fl oz of product per 1,000 square feet. For difficult to control soil pests, especially citrus root weevil (*Diaprepes abbreviatus*), apply product at the upper rate range (8 fl oz of product per 1,000 square feet).

Do not apply to water-saturated soil. Apply product in enough water to ensure good coverage of treated area, at least one gallon of water per 1,000 square feet. Irrigate treated area after application to disperse product into soil.

TARGET PESTS

APHIDS (*HEMIPTERA*)

Bean aphid; Cabbage aphid; Cotton aphid; Cowpea aphid; Green peach aphid; Greenbug; Hop aphid; Melon aphid; Pea aphid; Potato aphid; Rose aphid; Russian wheat aphid; Spotted alfalfa aphid

BEETLES (*COLEOPTERA*)

Alfalfa weevil; Apple curculio; Asian longhorned beetle*; Ataenius; Bean leaf beetle; Billbug; Black vine weevil; Cereal leaf beetle; Chinese rose beetle (*Adoretus sinicus*) (suppression only on field crops; Hawaii only); Citrus root weevil;

Colorado potato beetle; Corn rootworm; Cotton boll weevil; Cucumber beetle; Elm leaf beetle; Emerald ash borer*; Flea beetle; Fuller rose weevil; Green June beetle; Palm weevil*; Pecan weevil; Pepper weevil; Plantain weevil*; Plum curculio; Queensland longhorn beetle*; Root weevil; Rose curculio; Strawberry root weevil; Sweet potato weevil; Vegetable weevil; White grubs; Wireworms; Yellow-margined leaf beetle*

CATERPILLARS (*LEPIDOPTERA*)

Cabbage looper; Diamondback moth; European corn borer; European pepper moth*; Fall armyworm*; Imported cabbage worm; Lesser cornstalk borer; Rice stem borer; Southwestern corn borer; Sugarcane borer

CRICKETS & GRASSHOPPERS (*ORTHOPTERA*)

Grasshoppers; Locusts; Mole crickets; Mormon crickets

FLIES (*DIPTERA*)

Mushroom fly*; Phorid fly (*Megaselia* spp.)*

LEAFHOPPERS, MEALYBUGS, PLANT BUGS, PLANTHOPPERS, & PSYLLIDS (*HEMIPTERA*)

Bagrada bug*; Buffalo grass mealybug; Chinch bug; Citrus cocci*; Citrus mealybug; Citrus psylla*; Fleahopper; Grape leafhopper; Grape mealybug; Lace bug; Leafhopper; Longtailed mealybug; Lygus bug; Macadamia felted coccid*; Pear psylla; Planthopper; Potato leafhopper; Potato psylla; Rice delphacid*; Seed bug; Spotted lanternfly*; Stink bug; Tarnished plant bug; Tomato psylla; Variegated grape leafhopper; Virginia creeper leafhopper

SPIDER MITES (*ACARI*)

Carmine spider mite*; Citrus rust mite*; Clover mite*; Pacific spider mite*; Two-spotted spider mite*

THRIPS (*THYSANOPTERA*)

Chili thrips*; Citrus thrips*; Cuban laurel thrips; Florida flower thrips*; Greenhouse thrips; Onion thrips; Pear thrips; Potato thrips; *Thrips palmi*; Western flower thrips

WHITEFLIES (*HEMIPTERA*)

Banded-winged whitefly; Cassava whitefly*; Citrus blackfly; Citrus whitefly; Giant whitefly; Greenhouse whitefly; Silverleaf whitefly; Sweet potato whitefly; Tobacco whitefly

Not for use in California.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in a cool, dry place between 40°F and 85°F. Product stability decreases with time at elevated temperatures above 85°F. Tightly reclose the container of unused product. Do not contaminate unused product with water.

PESTICIDE DISPOSAL: To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke.

WARRANTY AND DISCLAIMER

This product conforms to the description set forth on this label and is reasonably fit for the purposes described herein when used according to the label directions and specified conditions. To the extent consistent with applicable law, manufacturer disclaims any and all other express or implied warranties of merchantability and fitness for particular purpose. To the extent consistent with applicable law, buyers and users shall assume all risk and responsibility for potential loss or damage if this product is used, stored, handled, or applied in a manner inconsistent with this labeling. To the extent consistent with applicable law, manufacturer shall not be liable for more than the purchase price for the quantity involved including incidental, consequential, or special damages.

CHEMIGATION INSTRUCTIONS

PRECAUTIONS:

Apply this product only through overhead sprinkler irrigation, including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move; or drip (trickle and microjet) irrigation. 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, contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system 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 CHEMIGATION:

1. 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.
2. 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.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. 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.
5. 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.
6. 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.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

8. Supply tank agitation is necessary if product is diluted in water before injection into irrigation system. Spray tank agitation is not necessary if product is used without dilution provided the product is resuspended before adding to the other spray tank and that content of spray tank are used the same day.
9. For best results in foliar applications by sprinkler, time chemigation with the end of irrigation water application. Time injection duration to apply product in the minimum irrigation volume necessary to achieve uniform coverage immediately prior to shutting off irrigation water. Excessive overhead irrigation during and after chemigation will wash active ingredient (spores) off foliage, reducing effectiveness.
10. For best results in soil applications by drip (trickle and microjet), apply product continuously for the duration of irrigation water application. Apply sufficient volume of water to carry product into proximity of the target pests.

DRIP (TRICKLE) AND MICRO-IRRIGATION 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 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 that 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 (*e.g.*, diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Use 1½ to 3 quarts of product per acre for most drip or microjet chemigation. For difficult to control pests, especially citrus root weevil (*Diaprepes abbreviatus*), apply product at up to 8 fl oz of product per 1,000 square feet. Apply continuously for the duration of irrigation water application to achieve uniform distribution and penetration of active ingredient (spores) in the soil. Supply tank agitation is necessary if product is diluted in water before injection into irrigation system. Supply tank agitation is not necessary if product is used without dilution provided the product is shaken well to resuspend spores before adding to the supply tank and that contents of supply tank are used the same day.

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 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 that 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 (*e.g.*, diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Use ½ to 1 quart of product per acre for most sprinkler chemigation applications. Apply up to 3 quarts of product per acre for high insect pressure and/or dense foliage. For corn, apply at a rate of 4 fluid ounces of product per acre.
8. For best results, time chemigation with the end of the irrigation water application. Time injection duration to apply product in the minimum irrigation volume necessary to achieve uniform coverage immediately prior to shutting off irrigation water. Excessive irrigation during and after chemigation will wash active ingredient (spores) off foliage, reducing effectiveness.
9. With center pivot or other continuous move equipment, apply product in ¼ to ½ inches of water per acre. With stationary sets, wheel lines, solid sets or hand move sprinklers, apply product during the last 20-30 minutes of the set.
10. Supply tank agitation is necessary if product is diluted in water before injection into irrigation system. Tank agitation is not necessary if product is used without dilution provided the product is shaken well to resuspend spores before adding the tank and those contents of tank are used the same day.
11. Do not apply when wind speed favors drift beyond the area intended for treatment.

SPRAY DRIFT CONSIDERATIONS

AERIAL APPLICATION

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications.

1. The distance of the outer most nozzles on the boom must not exceed ¾ the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered below.

INFORMATION ON DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

CONTROLLING DROPLET SIZE

- Volume: Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure: Do not exceed the nozzle manufacturer's specified pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of Nozzles: Use the minimum number of nozzles that provide uniform coverage.

- Nozzle Orientation: Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from the horizontal will reduce droplet size and increase drift potential.
- Nozzle Type: Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

BOOM LENGTH

For some use patterns, reducing the effective boom length to less than ¾ of the wingspan or rotor length may further reduce drift without reducing swath width.

APPLICATION HEIGHT

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the upwind and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

WIND

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect drift.

TEMPERATURE AND HUMIDITY

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

TEMPERATURE INVERSIONS

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing.

SENSITIVE AREAS

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).