

# BotaniGard® 22WP

WETTABLE POWDER MYCOINSECTICIDE



FOR ORGANIC PRODUCTION

**ACTIVE INGREDIENT:**

*Beauveria bassiana* strain GHA<sup>†</sup> ..... 22.0%

**OTHER INGREDIENTS:** ..... 78.0%

**Total:** ..... 100.0%

<sup>†</sup>Contains a minimum of 1 x 10<sup>13</sup> viable spores per pound of product.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

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.: 82074-2

EPA Est. No.: \_\_\_\_\_

Lot Number: \_\_\_\_\_

Net Weight: \_\_\_\_\_

ESL20250310

Ver20250311

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.

<b>FIRST AID</b>	
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>HOTLINE NUMBER</b>	
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.	

### **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
- Waterproof gloves
- 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
- Waterproof gloves
- Shoes plus socks

## 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

BotaniGard® 22WP 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.

Suitable for use with ultra low-volume application equipment.

## MODE OF ACTION AND APPLICATION TIMING

BotaniGard® 22WP 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. BotaniGard® 22WP 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 BotaniGard® 22WP with a compatible insecticide/miticide.

*Beauveria bassiana* occurs in soil in close association with corn plants where it infects corn borers. When BotaniGard® 22WP 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 low-volume application equipment. To mix, fill spray tank with half the desired amount of water and start agitation. Use a measuring cup, spoon, or calibrated container to add product to the spray tank and mix thoroughly. 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. One (1) cup contains approximately 4.5 dry ounces of product. 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. For best results, foliage should be dry at time of spraying. Test product on a small number of plants to check for potential damage before applying to larger number of plants. This product is non-phytotoxic to melons, tomatoes, cole crops, and a wide variety of ornamentals at specified label application rates.

#### 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.

#### CHEMIGATION

Do not apply this product through any type of irrigation system.

#### 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; dolnam-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 VEGETABLES

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; unqi 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; langsai; lanjui; 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; soursoap; 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); spilanthus; 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); threelaf 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)\*; coffee; 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 ORNAMENTAL PLANTS AND SHRUBS, AND TURF

##### FORESTRY

Trees and conifers; tree and forest seedlings; woody ornamentals

##### ORNAMENTAL PLANTS (INCLUDING FLOWERS, FLOWERING AND FOLIAGE PLANTS, BEDDING PLANTS, GROUNDCOVERS, SHRUBS, VINES, EVERGREENS, AND TREES)

African daisy; African lily; African violet (*Saintpaulia*); ageratum; air plant; alyssum; anthurium; arborvitae; ash; asparagus sprengeri; aster; atlas cedar; azalea; bald cypress; balsam fir; bamboo; barberry; beech; begonia; birch; Boston fern; bougainvillea; boxwood; bridal veil; cacti; caladium; calceolaria; calendula; calla lily; camella; camellias; carissa; carnation; ceanothus; celosia; chenille plant; cherro; Christmas cactus; chrysanthemum; cineraria; clevera; coleus; cordyline; corylus avellana; cotoneaster; cottonwood; crabapple; crepe myrtle; crossandra; croton; cycads spp. (*Encephalartos horridus*, *Encephalartos laurentianus*, *Dioon merolae*, *Microcycas*)\*; cyclamen; cypress; daffodil; dahlia; daisy; delphinium; deodar cedar; dichondra; dieffenbachia; dogwood; Douglas fir; dracaena; dumb cane; dusty miller; elm; eucalyptus; ferns; ficus; fig (nonfruiting); firethorn; fittonia; floss flower; foliage plants; forsythia; freesia; fuchsia; gardenia; gazania; *gazania longiscara*; geranium; gerbera; gerber daisy; gladiolus; gloxinia; gold-dust; goldentuft; gunpowder tree\*; grape (ornamental); gynura; gypsophila; hackberry; hawthorn; hederia; hemlock; hibiscus; hickory; holly; honeysuckle; hop bush; horse chestnut; hyacinth; hydrangea; iceplant; imitari; impatiens; India hawthorn; iris; ivy; Japanese aucuba; Japanese barberry; Japanese boxwood; Japanese spindle tree; Japanese yew; juniper; kalanchoe pinnata; lantana; larch; larkspur; laurel; leasianthus; leatherleaf fern; linden; lilac; lily; lithodora; lobelia; loquat; magnolia; mandevilla; maple; marigold; Mediterranean fan palm; mesembryanthemum; mimosa; monster; mother-in-law plant; mountain laurel; myrtle; nandina; narcissus; Norfolk Island pine\*; oak; oleander; olive (ornamental); orchid; ornamental kale; pachysandra; palms; pansy; parasol pine; pelargonium; peony; petunia; philodendron; phlox; photinia; piggyback plant; pine; pink; pittosporum; planetree; podocarpus; poinsettia; poplar; pothos ivy; prayer plant; primrose; privet; pteris fern; pussy-foot; pyracantha; rhododendron; rose; rubber plant; salvia; scabiosa; schefflera; schlumbegera; sedum; shrub verbena; shrubby cinquefoil; smoke tree; snapdragon; spathiphyllum; spruce; stock; sweet gum; sweet pea; sweet William; sycamore; syngonium; taxus; Texas sage; trumpet tree (*Cecropia obtusifolia*)\*; tulip; tulip tree; verbena; viburnum; vinca; Virginia creeper; walnut; wandering Jew; willow; yew; yucca; zinnia

**\*Not for use in California.**

##### TURF (INCLUDING LAWN AND SOD TURFGRASSES)

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

{Additional California use restrictions (“\* Not for use in California” and appropriate asterisk “\*\*”) may be added to the above listings as required by the California Department of Pesticide Regulation.}

## APPLICATION INSTRUCTIONS

GREENHOUSE, SHADEHOUSE, NURSERY (INDOOR/OUTDOOR), LANDSCAPE (TURF, SOD, ORNAMENTAL PLANTS), AND INTERIORSCAPES

### ALL LISTED CROPS

#### APPLICATION RATES (PRODUCT PER SPRAY VOLUME):

- All Listed Pests (except as specified below): ..... ½ – 2 lb/100 gal\*\*
- Whiteflies, Mealybugs, Aphids: ..... ½ – 1 lb/100 gal
- Thrips: ..... 1 – 2 lb/100 gal
- High-volume sprays: ..... up to 2 lb/100 gal
- Low-volume sprays: ..... ½ – 2 lb/5,000 – 20,000 ft<sup>2</sup>

\*\* depending on pest population and foliage density

#### HIGH-VOLUME SPRAYS:

Apply at a rate of up to 2 pounds of product per 100 gallons of spray volume in high-volume sprays. Mix well by external mixing, in-tank mixing, or pump circulation. **SPRAY TO WET BUT AVOID RUNOFF.**

#### LOW-VOLUME SPRAYS:

Apply at a rate equivalent to area coverage of high-volume spray. This would normally be ½ – 2 pounds of product for 5,000 to 20,000 square feet. Follow spray equipment manufacturer's instructions for final spray volume to obtain adequate coverage. **DO NOT APPLY THROUGH A THERMAL PULSE FOGGER.**

Contact your sales representative or dealer for specific instructions.

#### CUTTINGS DIP

This product can be used as pre-plant dips for cuttings as noted below. To prepare dip solution, thoroughly mix ¼ – ½ dry ounce of product per gallon of water (2.5 – 5 dry ounces of product per 10 gallons of water). Prepare only as much dip solution as can be used in one day. Do not use dip solution for more than one day. Spores in water for more than 24 hours will die. Dip a small number of plants in dip solution and observe for plant damage before using dip treatment. Do not use dips if there is any visible damage to test plants.

#### UNROOTED CUTTINGS

Dip the unrooted cuttings in the product solution just long enough to wet all surfaces, then remove to a flat area and allow cuttings to dry. For water-sensitive varieties, cover to protect until dry. Then proceed with normal planting and misting.

#### ROOTED CUTTINGS

Holding by the roots, briefly dip in the product solution just long enough to wet all surfaces, including leaves and stems. Once removed from the dip solution, cuttings can be potted, but allow plants to dry before watering.

## MUSHROOM HOUSES\*

### MUSHROOMS (ALL VARIETIES)

#### APPLICATION RATES (PRODUCT PER SPRAY VOLUME):

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

#### APPLICATION INSTRUCTIONS

Apply 1 – 2 pounds of this product per 100 gallons of water (0.16- 0.32 dry ounces of product per gallon of water). Apply between 25 and 50 gallons of this solution per 1,000 ft<sup>2</sup> 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.**

### TURF, ORCHARDS, AND CONTAINER ORNAMENTALS

#### SOIL-DWELLING INSECTS

For most soil applications, apply 1 – 4 dry oz (up to ¼ lb) 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 (4 dry 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.

Specimen

## TARGET PESTS

### APHIDS (*HEMIPTERA*)

Bean aphid; Cabbage aphid; Cotton aphid; Cowpea aphid; Green peach aphid; Greenbug; Hop aphid; Melon aphid; Pea aphid; Potato aphid; Root 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; Coffee berry borer\*; 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.

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#### 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:** {For plastic containers} 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. 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.

{For foil bags} Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment by shaking and tapping sides and bottom to loosen clinging particles. Then offer for recycling, if available, or dispose of empty bag 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.