

# BOTANIGARD® 22WP

Wettable Powder Mycoinsecticide for Control of Whitefly, Aphids, Thrips, Psyllids, Weevils, and Mealybugs in Ornamentals and Vegetables, Indoor/Outdoor Nurseries, Greenhouses, Shadehouses, Commercial Landscape/Interiorscape, and Turf

Active Ingredient: *Beauveria bassiana* Strain GHA.....22% \*  
Inert Ingredients.....78%\*\*

\*Based on the weight estimate of 4.78x10<sup>-12</sup> grams per spore

\*\* Contains petroleum distillates

BotaniGard 22WP contains 2 x 10<sup>11</sup> conidia per gram of active ingredient.

## Laverlam International Corporation

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### KEEP OUT OF REACH OF CHILDREN

## CAUTION

### PRECAUTIONARY STATEMENTS

#### Hazards to Humans and Domestic Animals

CAUTION. Harmful if swallowed, inhaled, or absorbed through the skin. Avoid breathing vapors (dust or spray mist). Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

#### PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear: long-sleeved shirt and long pants, shoes plus socks, and dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. 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 wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

#### ENVIRONMENTAL HAZARDS

This product is potentially pathogenic to honey bees. Avoid applying to areas where honey bees are actively foraging or around bee hives. This product may be toxic to fish. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment wash waters.

#### FIRST AID

<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further 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>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>

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

BotaniGard 22WP contains live spores of the naturally occurring fungus, *Beauveria bassiana*. Spores are alive and may be harmed by storage at high temperatures or contact with water for more than 24 hours. See storage instructions on this label.

**MODE OF ACTION** BotaniGard 22WP acts by contact. Spores must attach to the target insect for this product to be effective. **Thorough spray coverage is essential.** Spores may attach to insects either by direct contact from spray or from contact with sprayed foliage or soil. Spores on the insect germinate, and penetrate through the insect cuticle. The fungus then grows rapidly within the insect, causing mortality.

BotaniGard 22WP works best in a pest management program designed to keep insect populations below levels which damage crops. Typically, it takes 3-7 days for an infested insect to die and 7-10 days after the first spray to see a reduction in an insect population. Application rates, spray frequency, spray coverage and insect numbers affect the speed at which insect populations are reduced.

Frequent scouting for insects in crops is recommended. BotaniGard 22WP is most effective when used at the first appearance of insects in the crop, before high insect populations develop.

BotaniGard 22WP may be combined with chemical insecticides for rapid knockdown of damaging insect populations or large numbers of insects moving into crops.

Contact Laverlam International Corporation or your dealer for specific information on compatible insecticides.

**PRE-HARVEST INTERVAL** Pre-harvest interval for BotaniGard 22WP is zero (0) days. BotaniGard 22WP can be applied up to and including the day of harvest.

#### DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and 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 only apply 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 over long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- Dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95 or P-95.

#### NON-AGRICULTURAL USE REQUIREMENTS

#### GENERAL INFORMATION

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticide (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours, unless wearing the appropriate personal protection equipment.

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

**For use in controlling Whitefly, Aphids, Thrips, Psyllids, Mealybugs, Leaf hoppers, Plant bugs, Weevils and Beetles in Fields, Agronomic, Vegetable and Orchard Crops; also in Forestry; Grasshoppers, Mormon Crickets, Locust and Beetles in Range land, Improved Pastures and Agronomic Crops.**

#### **INSECTS FOR WHICH BOTANIGARD 22 WP MAY BE USED**

Wettable powder mycoinsecticide for control of Whitefly, Aphids, Thrips, Psyllids, Weevils, and Mealybugs in Ornamentals and Vegetables, Indoor/Outdoor Nurseries, Greenhouses, Shade houses, Commercial Landscape/ Interiorscape, and Turf.

#### **WHITEFLY**

Banded-winged Whitefly, Citrus Blackfly, Citrus Whitefly, Giant Whitefly, Greenhouse Whitefly, Silverleaf Whitefly, Sweet Potato Whitefly (aka Tobacco Whitefly)

#### **APHIDS**

Bean Aphid, Cabbage Aphid, Cowpea Aphid, Green Peach Aphid, Greenbug, Hop Aphid, Melon/Cotton Aphid, Pea Aphid, Potato Aphid, Rose Aphid, Russian Wheat Aphid, Spotted Alfalfa Aphid

#### **THRIPS**

Greenhouse Thrips, Cuban Laurel Thrips, Pear Thrips, Potato/Onion Thrips, *Thrips palmi*, Western Flower Thrips

#### **PSYLLIDS**

Pear Psylla, Tomato Psylla, Potato Psylla

#### **LEAFHOPPERS AND PLANT HOPPERS**

Grape Leafhoppers, leafhopper, plant hoppers, Potato Leafhoppers, Virginia Creeper Leafhopper, Variegated Leafhopper.

#### **MEALYBUGS**

Citrus Mealybug, Grape Mealybug, Buffalo Grass Mealybug, Longtailed Mealybug

#### **SCARAB BEETLES**

Atenius, Green June Beetle, White Grubs

#### **PLANT BUGS (HETEROPTERA)**

Chinch Bugs, Lace Bugs

#### **WEEVILS**

Black Vine Weevil, Strawberry Root Weevil, Fuller Rose Weevil, Rose Curculio, Billbugs, Root Weevil

#### **CROPS ON WHICH BOTANIGARD 22WP MAY BE USED**

BotaniGard 22WP may be used on most crops since *Beauveria bassiana* Strain GHA, the active ingredient, is exempt from residue tolerances when applied to growing crops. Each crops list below therefore, is introduced with the phrase "such as".

**VEGETABLES:** acerola, arracacha, arrowroot, artichoke, arugula, asparagus, atermoya, balsam pear, bamboo shoots, beans (all varieties), beet, blackeyed peas, bokchoy, broccoli, broccoli raab, Brussels sprouts, burdock, cabbage, cantaloupe, carambols, carrots, casaba melons, cassava, catjang, cauliflower, celeriac, celery, celtuce, chayote, chervil, chickpeas, chicory, Chinese broccoli, Chinese cabbage, Chinese gai lon, Chinese longbeans, Chinese mustard, Chinese spinach, Chinese waxgourd, chrysanthemum (edible), chufa, cilantro, citron melon, collards, corn salad, crenshaw melon, cress, cucumber, dandelion, dasheen, daikon, dock, edamame, eggplant, endive, escarole, fennel, garlic, gherkin, ginger, golden pershaw melon, gourds (edible), groundcherry, guar, honey balls, honeydew melon, horseradish, kale, kohlrabi, leek, lentils, leren, lettuce, mango melon, muskmelon hybrids / varieties, mustard greens, New Zealand spinach, okra, onion, orach, parsley,

parsnip, peas (all varieties), pepinos, pepper (all varieties), Persian melon, pimento (all varieties), pineapple melon, potato, pumpkin, purslane, radish, radicchio, rambutan, rape greens, rapini, rhubarb, rutabaga, salsify, shallot, snake melon, soybeans, spinach, squash (summer/winter), sugar beet, sweet potato, Swiss chard, tanager, tomatillo, tomatoes, tumeric, turnip, watermelon, yam, zucchini.

**FRUITS AND BERRIES:** apple, apricot, avocado, bananas, blackberry, blueberry, boysenberry, calamondin, carob, cherimoya, cherry (sweet/sour), chironja, citrus citron, citrus hybrids, coffee, crabapple, cranberry, currant, dates, dewberry, durian, elderberry, fejoa, figs, gooseberry, grape (table, raisin, wine), grapefruit, guava, huckleberry, kiwi, kumquat, lemon, limes, loganberry, loquat, lychee, mandarin, mango, marionberry, nectarine, olallie berry, olives (all varieties), orange, oriental pear, papaya, passion fruit, peach, pear, persimmon, pineapple, plum, pomegranate, prune, pummelo, quihuna, quince, raspberry, sour cherry, strawberry, sweet cherry, tangelo, tangerine, youngberry.

**HERBS AND SPICES:** allspice, anise, balm, basil, borage, burnet, chamomile, caper buds, caraway, cardamom, catnip, celery seed, chervil, chicony, chives, cilantro/coriander, clary, coriander, cinnamon, costmary, cumin, curry leaf, dill, fennel, fenugreek, ginseng, horehound, hyssop, mace, marjoram, mint, mustard, nasturtium, nutmeg, oregano, paprika, pennyroyal, pepper (black/white), peppermint, rosemary, rue, sage, saffron, savory, sesame, spearmint, sweet bay leaf, tansy, tarragon, thyme, wintergreen, woodruff, wormwood.

#### **ORNAMENTALS, INCLUDING FLOWERS, FLOWERING AND FOLIAGE PLANTS, BEDDING PLANTS, GROUND-COVERS, SHRUBS, VINES, EVERGREENS AND TREES**

African lily, African violet, ageratum, alyssum, anthurium, arbor vitea, 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, cinararia, cleyera, coleus, cordyline, corylusavellana, cotoneaster, cottonwood, crabapple, crepe myrtle, crossandra, croton, cyclamen, cypress, daffodil, dahlia, daisy, delphinium, deodar cedar, dichondra, diffenbachia, dogwood, Douglas fir, dracaena, dumb cane, Dusty Miller, elm, eucalyptus, ferns, ficus, fig, firethorn, fittonia, floss flower, foliage plants, forsythia, freesia, fuchsia, gardenia, geranium, gerbera, gerber daisy, gladiolus, gloxinia, grape, gynura, gypsophilia, hackberry, hawthorne, hederia, hemlock, hibiscus, hickory, holly, honey suckle, hop bush, horsechestnut, hyacinth, hydrangea, iceplant, imitari, impatiens, India hawthorn, iris, ivy, Japanese aucuba, Japanese barberry, Japanese boxwood, Japanese spindle tree, Japanese yew, juniper, kalanchoe, lantana, larch, larkspur, laurel, leasianthus, leatherleaf fern, linden, lilac, lily, lithodora, lobelia, loquat, magnolia, mandevilla, maple, marigold, Mediterranean fan palm, mesembryanthemum, mimosa, monstera, mother-in-law plant, mountain laurel, myrtle, nandina, narcissus, oak, oleander, olive, orchid, ornamental kale, pachysandra, palms, pansy, parasol pine, pelegonium, peony, petunia, philodendron, phlox, photina, piggyback, plant, pine, pink, pitosporum, planetree, podocarpus, poinsettia, poplar, pothos ivy, prayer plant, primrose, privet, pteris fern, 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, tulip, tulip tree, verbena, vibernum, vinca, Virginia creeper, walnut, wandering Jew, willow, yew, yucca, zinnia.

#### **APPLICATION**

BotaniGard 22WP may be applied using hand-held, and/or ground spray equipment; also by low-volume application equipment.

#### **MIXING**

Fill spray tank with half the desired amount of water, start agitation. Use a measuring cup, spoon or calibrated container to add BotaniGard 22WP to the spray tank and mix thoroughly. Add remainder of desired amount of water. Triple rinse empty container and add rinse water to spray tank. For best results, continue agitation during application. Do not mix more BotaniGard 22WP than can be sprayed in one day. One (1) cup contains approximately 4.5 ounces of BotaniGard 22WP.

After mixing in water, spray within one day. Fungal spores in BotaniGard 22WP will die and lose effectiveness if left overnight or longer in water.

## **DOSAGE RATE**

### **GREENHOUSE, NURSERY, LANDSCAPE AND INTERIORSAPES**

Whitefly and Aphids.....½ to 1 pound BotaniGard 22WP/100 gal spray volume  
Thrips.....1-2 pounds BotaniGard 22WP/100 gal spray volume  
Other labeled insects.....½ to 2 pounds BotaniGard 22WP/100 gal spray volume  
Rate depends on insect population.

BotaniGard 22WP may be applied at up to a maximum of three (3) pounds per 100 gallons spray volume for high insect populations or dense foliage.

Use quantity of spray sufficient to thoroughly cover foliage infested with insects. Crop size, spray equipment and local practice will determine the volume of water needed. One hundred gallons of spray volume will typically cover 5,000-20,000 square feet. **SPRAY TO WET, BUT AVOID**

### **RUNOFF.**

## **LOW VOLUME APPLICATION**

Apply at a rate equivalent to area coverage of high volume spray. This would normally be ½ pound to 2 pounds 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.**

## **CUTTINGS DIP**

Applications of BotaniGard 22WP may be used as pre-plant dips for cuttings as noted below. To prepare dip solution, thoroughly mix ¼ - ½ oz BotaniGard 22WP per gallon of water, (2 ½ - 5 oz. per 10 gallons 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 BotaniGard 22WP solution just long enough to wet all surfaces, then removing to a flat area. 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 BotaniGard 22WP 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.

## **DOSE RATE FOR TURF, FOR SOIL APPLICATIONS IN CONTAINER ORNAMENTALS AND LANDSCAPE/ INTERIORSCAPE**

For most soil applications, apply 1-4 oz. (up to ¼ lb.) BotaniGard 22WP per 1,000 square feet. For difficult to control soil pests, especially citrus root weevil, BotaniGard 22WP may need to be applied at 4 oz. per 1,000 square feet.

Do not apply to water-saturated soil. Apply BotaniGard 22WP in enough water to ensure good coverage of treated area, at least one gallon per 1,000 square feet. Irrigate treated area after application to disperse BotaniGard 22WP into soil.

## **APPLICATION FREQUENCY**

Apply BotaniGard 22 WP at 5-10 day intervals. High insect populations, especially whitefly and aphids, may require application at 2-5 day intervals. Repeat applications for as long as pest pressure persists. There is no limit to the number of applications or total amount of BotaniGard 22 WP which can be applied in one season.

## **PLANT SAFETY**

BotaniGard 22WP has shown excellent plant safety but has not been tested on all plant varieties or in all available tank mixes. BotaniGard 22WP is non-phytotoxic to melons, tomatoes, cole crops and a wide variety of ornamentals at recommended label dosage.

For best results, foliage should be dry at time of spraying. Test BotaniGard 22WP on a small number of plants to check to potential damage before applying to a larger number of plants.

**TANK MIX COMPATIBILITY** BotaniGard 22WP is physically and biologically compatible with a wide range of insecticides and spray adjuvants. It is not compatible with fungicides in tank mixtures. Fungicides will kill the spores.

**Adjuvants** BotaniGard 22WP is designed for application without additional wetting agents and spreaders. If adjuvants are needed for some other reason, contact your dealer or Laverlam International Corporation for specific recommendations. Some wetting agents and spreaders kill the spores, the active ingredient in BotaniGard 22WP, or contribute to poor mixing and spray problems.

**Compatibility With Chemical Insecticides** BotaniGard 22WP is compatible with most chemical insecticides. However, some insecticide formulations can kill the fungal spores, the active ingredient in BotaniGard 22WP. If you are going to use BotaniGard 22WP in combination with other pesticides, contact your dealer or Laverlam International Corporation for specific information. In all cases, pesticides should be used in accordance with their labels.

**Compatibility With Fungicides** BotaniGard 22WP is not compatible in tank mix with fungicides. Contact Laverlam International or your dealer for specific recommendations on using BotaniGard 22WP with fungicides.

## **CHEMIGATION**

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

### **STORAGE AND DISPOSAL**

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

#### **PESTICIDE STORAGE**

- Open dumping is prohibited.
- Store in a cool, dry place
- Avoid storage below freezing temperatures or above 85°F. BotaniGard 22WP stability decreases with time at elevated temperatures above 85°F. Do not contaminate unused product with water.

#### **PESTICIDE DISPOSAL**

- Wastes resulting from the use of this product may be disposed of at an approved waste disposal facility.
- Do not contaminate water when disposing of equipment washwaters.

#### **CONTAINER DISPOSAL**

- Do not reuse as a container. Triple rinse (or equivalent). Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

## **CONDITIONS OF SALE**

BotaniGard 22WP conforms to the description set forth on this label and is reasonably fit for the purposes as described herein when used according to the label directions and specified conditions. The manufacturer disclaims any and all other expressed or implied warranties of merchantability and fitness for a particular purpose. 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 its labeling. As labels are subject to revision, always carefully read and follow the label on the product container. Laverlam International Corporation's recommendations for the use of this product have been determined based on tests conducted and believed reliable. To the extent permitted by law, manufacturer shall not be liable for more than the purchase price for the quantity involved, including incidental, consequential or special damages.