

BotaniGard® ES

Emulsifiable Suspension Mycoinsecticide

For use in controlling Whitefly, Aphids, Thrips, Psyllids and Mealybugs in Ornamentals and Vegetables, Indoor/Outdoor Nursery, Greenhouse, Shadehouse, Commercial Landscape, Interiorscape, and Turf.

ACTIVE INGREDIENTS:

Beauveria bassiana Strain GHA 11.3%**

INERT INGREDIENTS:

..... 88.7%

* Contains petroleum distillates

** Based on the weight estimate of 4.78x10¹² grams per spore.

BotaniGard ES contains 2.3 x 10¹⁰ viable Beauveria bassiana spores per gram.

EPA Reg. No. 65626-8 EPA Est. No. 65652-MT-2

KEEP OUT OF REACH OF CHILDREN

CAUTION

Si Usted no entiende la etiqueta, busque a alguien para que se la explique a Usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

See below for additional Precautionary Statements.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse. Harmful if swallowed, inhaled, or absorbed through the skin. Minimize breathing mists or vapors. Use with adequate ventilation. Avoid contact with skin, eyes, or clothing. In case of contact, immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.

FIRST AID

IF SWALLOWED: Do not induce vomiting; call a physician immediately.

IF INHALED: If irritation persists, contact physician.

IF ON SKIN: Wash with soap and water.

IF IN EYES: Flush with water.

USER SAFETY RECOMMENDATIONS: Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

NOTE TO PHYSICIAN

Product contains petroleum distillates; vomiting may cause aspiration pneumonia.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear: Coveralls over 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.

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, or 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.

GENERAL INFORMATION

BotaniGard ES contains live spores of the naturally occurring fungus, Beauveria bassiana Strain GHA. 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 AND APPLICATION TIMING: Begin treatment of crops at the first appearance of the insect pest. Typically, it takes 7-10 days after the first spray to see control. Application rates, frequency, spray coverage and insect numbers impact the speed at which acceptable control is achieved. BotaniGard ES is most effective when used early, before high insect populations develop. Reapply as necessary under a pest management program that includes close scouting. Intense pest outbreaks may require combination of BotaniGard ES with a compatible insecticide.

Contact Mycotech Corporation or your distributor for specific information on compatible insecticides.

PRE-HARVEST INTERVAL: Pre-harvest interval for BotaniGard ES is zero (0) days. BotaniGard ES can be applied up to 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. 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 unless wearing the appropriate personal protective equipment.



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PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls over long-sleeved shirt and long pants
- Goggles, face shield or safety glasses
- 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

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.

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

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

For use in controlling Whitefly, Aphids, Thrips, Psyllids and Mealybugs in Ornamentals and Vegetables, Indoor/Outdoor Nursery, Greenhouse, Shadehouse, Commercial Landscape, Interiorscape, and Turf. May be aerially applied. Suitable for use with ultra low-volume application equipment.

INSECTS FOR WHICH BOTANIGARD ES MAY BE USED

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

APHIDS, SUCH AS: 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, SUCH AS: Greenhouse Thrips, Cuban Laurel Thrips, Pear Thrips, Potato/Onion Thrips, Thrips palmi, Western Flower Thrips

PSYLLIDS, SUCH AS: Pear Psylla, Potato Psylla
MEALYBUGS, SUCH AS: Citrus Mealybug, Grape Mealybug, Buffalo Grass Mealybug, Longtailed Mealybug

SCARAB BEETLES, SUCH AS: Atenius, Green June Beetle, White Grubs

PLANT BUGS (HETEROPTERA), SUCH AS: Chinch Bugs, Lace Bugs

WEEVILS, SUCH AS: Black Vine Weevil, Strawberry Root Weevil, Fuller Rose Weevil, Rose Curculio, Billbugs, Root Weevil

CROPS ON WHICH BOTANIGARD ES MAY BE USED

BotaniGard ES may be used on most crops since Beauveria bassiana Strain GHA, the active ingredient, is exempt from residue tolerances when applied to growing crops.

VEGETABLES, SUCH AS: acerola, arracacha, arrowroot, artichoke, arugula, asparagus, atemoya, 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, celluce, chayote, chervil, chickpeas, chicory, Chinese broccoli,

Chinese cabbage, Chinese gai lon, Chinese long-beans, 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, radochio, rambutan, rape greens, rapini, rhubarb, rutabaga, salsify, shallot, snake melon, soybeans, spinach, squash (summer/winter), sugar beet, sweet potato, Swiss chard, tanager, tomatillo, turmeric, turnip, watermelon, yam, zucchini

FRUITS AND BERRIES, SUCH AS: 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, SUCH AS: allspice, anise, balm, basil, borage, burnet, chamomile, caper buds, caraway, cardamom, catnip, celery seed, chervil, chicory, chives, cilantro/coriander, cinnamon, clary, coriander, 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, GROUNDCOVERS, SHRUBS, VINES, EVERGREENS AND TREES: African lily, African violet, ageratum, alyssum, anthurium, arbor vitea, ash, asparagus sprengerii, 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, clevera, 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, gypsophila, hackberry, hawthorne, hederia, hemlock, hibiscus, hickory, holly, honey suckle, hop bush, horsechestnut, hyacinth, hydrangia, 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, lihdn, 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, pittosporum, 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, viburnum, vinca, Virginia creeper, walnut, wandering Jew, willow, yew, yucca, zinnia

TURF, INCLUDING LAWN AND SOD TURF GRASSES: Bermuda grass, blue grass, fescue, St. Augustine grass, zoysia grass

MIXING AND APPLICATION

SHAKE WELL BEFORE USING. BotaniGard ES may be applied using hand-held, ground and/or aerial spray equipment, or low-volume application. BotaniGard ES 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 BotaniGard ES to suspend spores then with agitator running, slowly add desired quantity of BotaniGard ES to spray tank. Add remainder of desired amount of water. Continue agitation throughout loading and spraying. Triple rinse empty BotaniGard ES container with water and add rinse water to spray tank. For best results, continue agitation during spraying. Do not mix more BotaniGard ES than needed for that day. Do not mix BotaniGard ES the day before application. Spores will die if left overnight or longer in the spray tank.

Contact your dealer or Mycotech Corporation for recommendations about specific crops, insects and spray equipment.

DOSAGE RATE FOR GREENHOUSE, SHADEHOUSE, INDOOR/OUTDOOR NURSERY, LANDSCAPE AND INTERIORSCAPE

HIGH VOLUME APPLICATION: Apply at a rate of up to three (3) quarts per 100 gallons in high volume sprays (2 - 6 tsp., or 0.33 to 1.00 fluid ounces per gallon). Mix well by external mixing, in-tank mixing, or pump circulation to form emulsion. SPRAY TO WET, BUT AVOID RUNOFF.

Typical Application Rates/100 Gallons

Whiteflies, Mealybugs, Aphids: 1/2 quart to 1 quart/100 gallons spray volume

Thrips: 1 to 2 quarts/100 gallons spray volume

Other labeled insects: 1/2 to 2 quarts/100 gallons spray volume depending on insect population and foliage density.

LOW VOLUME SPRAYS: Apply at a rate equivalent to area coverage of high volume spray. This would normally be 1/2 quart to 2 quarts 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 dealer or Mycotech Corporation for specific recommendations.

CUTTINGS DIP

Applications of BotaniGard ES may be used as pre-plant dips for cuttings as noted below. To prepare dip solution, thoroughly mix 1/2 - 1 oz BotaniGard ES per gallon of water, (5 - 10 oz. per 10 gallons water). Prepare only as much dip solution as can be

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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 ES solution just long enough to wet all surfaces, then removing 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 BotaniGard ES 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 ORCHARDS, CONTAINER ORNAMENTALS AND LANDSCAPE/INTERIORSCAPE

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

Do not apply to water-saturated soil. Apply BotaniGard ES 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 ES into soil.

APPLICATION FREQUENCY

Apply BotaniGard ES 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 on the number of applications or total amount of BotaniGard ES which can be applied in one season.

PLANT SAFETY

BotaniGard ES has shown plant safety but has not been tested on all plant varieties or in all tank mixes. Test BotaniGard ES 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

BotaniGard ES 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.

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

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

Compatibility With Fungicides BotaniGard ES is compatible in tank mix with some fungicides. Contact Mycotech or your dealer for specific recommendations on using BotaniGard ES with fungicides.

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CHEMIGATION

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

SPRAY DRIFT FOR AERIAL APPLICATION: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine 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, public health uses or to applications using dry formulations.

- 1) The distance of the outer most nozzles on the boom must not exceed 3/4 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 in the Aerial Drift Reduction Advisory Information.

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).

Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rates flows produce larger droplets.

Pressure - Do not exceed the nozzle manufacturer's recommended 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 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 3/4 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 downward. Therefore, on the up 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 spray 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 direction 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 upward 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).

STORAGE AND DISPOSAL

STORAGE: Do not contaminate water, food, or feed by storage or disposal. Store in a cool, dry place. Avoid storage below freezing temperatures or above 85° F. BotaniGard ES 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: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

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.

BotaniGard® ES

CONDITIONS OF SALE

BotaniGard ES 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. The manufacturer disclaims any and all other express or implied warranties of merchantability and fitness for 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 this labeling. 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.

Distributed by Mycotech

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