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Systems Integration Group, Inc.

PM 91

65626-10

BOTANIGARD 22WP

4/12/99

Pg 1/10

Wettable Powder Mycoinsecticide for Control of Whitefly, Aphids, Thrips, Psyllids, Weevils, Leafhoppers, Beetles 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 4.78×10^{12} grams per spore
** Contains petroleum distillates

BotaniGard 22WP contains 2×10^{13} viable *Beauveria bassiana* spores per pound.

EPA ESTABLISHMENT NO. 65626-MT-02 EPA REGISTRATION NO. 65626-10

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

Harmful if swallowed, inhaled, or absorbed through the skin. Avoid breathing vapors (dust or spray mist). 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.

USER SAFETY RECOMMENDATIONS

Users should: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

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.

ACCEPTED
APR 12 1999
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USER SAFETY RECOMMENDATION: Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Vomiting may cause aspiration pneumonia.

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.

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 disposal of equipment wash waters.

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Phone: (406) 782-2386

P.O. Box 4109
Fax: (406) 782-9912

Butte, MT 59702-4109
ED9902J1

Net Contents:

Lot Number:

Expiration Date

GENERAL INFORMATION

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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.

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.

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 infected 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 Mycotech Corporation or your dealer for specific information on compatible insecticides.

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.

FOR AGRICULTURAL USE: As a general precaution when exposed to potentially high concentrations of living microbial products such as this, all mixers/loaders and applicators must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95.

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 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.

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

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
- Shoes plus socks
- Dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95 or P-95.
- Waterproof gloves

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 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 appropriate personal protective equipment.

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

For use in controlling Whitefly, Aphids, Thrips, Psyllids, Mealybugs, Leafhoppers, Plant Bugs, Weevils and Beetles in Field, Agronomic, Vegetable and Orchard Crops; also in Forestry; Grasshoppers, Mormon Crickets, Locusts and Beetles in Rangeland, Improved Pastures and Agronomic Crops.

INSECTS FOR WHICH BOTANIGARD 22WP MAY BE USED

ORTHOPTERA, SUCH AS

Grasshoppers
Mormon Crickets

Locusts
Mole Crickets

WHITEFLY, SUCH AS

Banded-winged Whitefly	Giant Whitefly	Sweet Potato Whitefly (aka
Citrus Blackfly	Greenhouse Whitefly	Tobacco Whitefly)
Citrus Whitefly	Silver-leaf Whitefly	

APHIDS SUCH AS

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

THRIPS, SUCH AS

Cuban Laurel Thrips	Potato/Onion Thrips
Greenhouse Thrips	Thrips <i>palmi</i>
Pear Thrips	Western Flower Thrips

PSYLLIDS, SUCH AS

Tomato/Potato Psylla

LEAFHOPPERS AND PLANTHOPPERS, SUCH AS

Grape Leafhoppers	Plant Hoppers	Virginia Creeper Leafhoppers
Leafhopper	Potato Leafhoppers	Variegated Leafhoppers

WEEVILS, SUCH AS

Black Fine Weevil	Citrus Root Weevil	Pepper Weevils
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SCARAB BEETLES, SUCH AS

Altenius	Green June Beetle	White Grub
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MEALYBUGS, SUCH AS

Buffalo Grass Mealybug	Grape Mealybug
Citrus Mealybug	

CROPS ON WHICH BOTANIGARD 22WP MAY BE USED

BotaniGard 22WP may be used on most crops since *Beauveria bassiana* Strain CHA, 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, SUCH AS:

acerola	beet	carrots
arracacha	blackeyed peas	casaba melons
arrowroot	bokchoy	cassava
artichoke	broccoli	catjang
arugula	broccoli raab	cauliflower
asparagus	Brussels sprouts	celeriac
atermoya	burdock	celery
balsam pear	cabbage	celtuce
bamboo shoots	cantaloupe	chayote
beans (all varieties)	carambols	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

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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
tanier
tomatillo
tomatoes
tumeric
turnip
watermelon
yam
zucchini

FRUITS AND BERRIES, SUCH AS

apple
apricot
avacado
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

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

ORNAMENTALS, INCLUDING FLOWERS, FLOWERING AND FOLIAGE PLANTS, BEDDING PLANTS, GROWDCOVERS, SHRUBS, VINES, EVERGREENS AND TREES

- | | | |
|---------------------|------------------|----------------|
| African lily | calendula | daffodil |
| African violet | calla lily | dahlia |
| ageratum | camella | daisy |
| alyssum | camellias | delphinium |
| anthurium | carissa | deodar cedar |
| arbor vitea | camation | dichondra |
| ash | ceanothus | differnbachia |
| asparagus sprengeri | celosia | dogwood |
| aster | chenille plant | Douglas fir |
| atlas cedar | cherro | dracaena |
| azalea | Christmas cactus | dumb cane |
| bald cypress | chrysanthemum | Dusty Miller |
| balsam fir | cinararia | elm |
| bamboo | clevera | eucalyptus |
| barberry | coleus | ferns |
| beech | cordyline | fig |
| begonia | corylusavellana | firethorn |
| birch | cotoneaster | fittonia |
| Boston fern | cottonwood | floss flower |
| bougainvilla | crabapple | foliage plants |
| boxwood | crepe myrtle | forsythia |
| bridal veil | crossandra | freesia |
| cacti | croton | fuchsia |
| caladium | cyclamen | gardenia |
| calceolara | cypress | |

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geranium
 gerbera
 gerber daisy
 gladiolus
 gloxinia
 grape
 gynura
 gypsophila
 hackberry
 hawthorne
 heder
 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
 pittosporum
 planetree
 podocarpus
 poinsettia
 poplar
 pothos ivy

prayer plant
 primrose
 privet
 pteris fern
 pyracantha
 rhododendron
 rose
 rubber plant
 salvia
 scabiosa
 schefflera
 schlumbergera
 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
 verberna
 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.

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DOSAGE RATE

GREENHOUSE, NURSERY, LANDSCAPE AND INTERIORSCAPES

Whitefly and Aphids..... ½ to 1 pound BotaniGard 22WP/100 gallons spray volume
Thrips..... 1-2 pounds BotaniGard 22WP/100 gallons spray volume
Other labeled insects..... ½ to 2 pounds BotaniGard 22WP/100 gallons 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 soils pests, especially citrus root weevil (*Diaprepes abbreviatus*), 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. Test BotaniGard 22WP on a small number of plants to check for potential damage before applying to a larger number of plants. 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.

TANK MIX COMPATABILITY BotaniGard 22WP is physically and biologically compatible with a wide range of insecticides and spray adjuvants. It is not compatible with all fungicides in tank mixtures. Some 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 Mycotech 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 Mycotech 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 all fungicides. Contact Mycotech 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.

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. Mycotech 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.