

## Supplemental Label

# General Hydroponics Defguard Biofungicide / Bactericide

### For use on hemp

**This supplemental labeling expires on 12/19/2022 and must not be used or distributed after this date**

Controls listed diseases such as: Powdery mildew, *Botrytis*/Grey mold, Downy mildew, *Pythium*, "Damping off," seedling blights, and root or crown rot diseases caused by *Pythium*, *Rhizoctonia*, *Fusarium*, *Macrophomina phaseoli*, *Phytophthora*, or *Verticillium* spp., Hemp canker, Yellow leaf spot and Brown blight

## KEEP OUT OF REACH OF CHILDREN

### CAUTION

See affixed label for additional directions for use, precautionary statements and first aid.

This labeling and the full EPA approved label attached to the container must be in the possession of the user at the time of application. Read the label affixed to the container for this product before applying. Use of this product according to this labeling is subject to the use precautions and limitations imposed by the label affixed to the container for the product

This product is a broad-spectrum preventative biofungicide/bactericide for control or suppression of fungal and bacterial plant diseases. The active ingredient of General Hydroponics Defguard Biofungicide / Bactericide is a strain (D747) of the beneficial bacterium *Bacillus amyloliquefaciens*. This product also colonizes plant root hairs, preventing establishment of disease-causing fungi and bacteria.

This product can be applied alone or in combination and/or rotation with chemical fungicides as a tool for integrated disease management in hemp

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**Foliar application:** For control of diseases on foliage, flowers, fruit, or other above-ground parts of plants: Mix this product in water and apply as a spray at a rate of **0.5 to 6 quarts** of this product per acre in sufficient water to achieve thorough coverage of the crop canopy with minimal runoff. Begin applications at crop emergence, transplanting, or when conditions are conducive to development of disease. Repeat application every 3 to 10 days, or as needed, for as long as conditions favor disease development. Lower rates (0.5 to 3 quarts per acre) may be applied under light disease pressure, to smaller (e.g. newly-emerged) plants, or when this product is used in a tank mix with other fungicides whose labels allow such use. Under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (3-6 quarts/acre), apply more frequently (every 3-7 days), and mix or rotate this product with other fungicides for improved performance.

**Soil application:** For control of soilborne diseases infecting seeds, seedlings, roots, crown, stems, or other plant parts below ground or in contact with soil: Apply this product at **0.5 to 4.5 pints per acre**. Mix the required amount in sufficient water to apply by one of the following methods:

- Soil drench applied to transplants in flats or pots in the greenhouse or nursery any time prior to transplanting (see additional drench instructions under "Nurseries, greenhouses, shade houses, and ornamental plants" below).
- Soil drench at transplanting, using a "water wheel" injector, spray nozzles/hoses, or other method to drench each root ball and/or planting hole.
- Soil or seedline drench, or banded spray (in-furrow) at planting. See the section on "Banded (in-furrow) application" below for additional instructions.

Follow-up (post-planting) preventative applications can be made every 2-4 weeks by one or more of the following methods, if needed:

- Drip (trickle) or any type of sprinkler irrigation, any time after planting or transplanting. See Chemigation Instructions for additional information.
- Spray directly onto the soil surface and/or lower plant parts. If targeting root disease, follow immediately with sufficient overhead sprinkler irrigation to move this product to the root zone.
- Injection directly into the rooting zone using shanks or similar equipment.

Lower rates (0.5 to 2 pints of this product per acre) may be applied under light disease pressure, to smaller plants, or when this product is used in a tank mix with other fungicides whose labels allow such use. Under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, use higher label rates (2 - 4.5 pints per acre), apply more frequently (every 2 weeks), and mix or rotate this product with other fungicides for improved performance.

**Banded (in-furrow) application:** Use the table below (rate this product per acre) to determine the correct application rate in fluid ounces per 1,000 row feet based on row spacing and desired rate per acre. Mix the required amount of this product in water and apply as banded spray (4" to 6" wide) or seedline drench centered over the planting furrow. Apply directly over seeds in the furrow just before they are covered with soil. The volume of water required per acre or per 1,000 row feet will depend on the application equipment used. Consult your local cooperative extension service if you need assistance calibrating band spraying equipment.

This product Rate/acre		Space between rows (inches)														
Pints	Fl oz	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
0.5	8	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6
0.75	12	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9
1.0	16	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.2
1.25	20	0.5	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.1	1.1	1.2	1.3	1.4	1.5	1.5
1.5	24	0.6	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.7	1.8
1.75	28	0.6	0.7	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1
2.0	32	0.7	0.9	1.0	1.1	1.2	1.3	1.5	1.6	1.7	1.8	2.0	2.1	2.2	2.3	2.4
2.25	36	0.8	1.0	1.1	1.2	1.4	1.5	1.7	1.8	1.9	2.1	2.2	2.3	2.5	2.6	2.8
2.5	40	0.9	1.1	1.2	1.4	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.8	2.9	3.1
2.75	44	1.0	1.2	1.3	1.5	1.7	1.9	2.0	2.2	2.4	2.5	2.7	2.9	3.0	3.2	3.4
3.0	48	1.1	1.3	1.5	1.7	1.8	2.0	2.2	2.4	2.6	2.8	2.9	3.1	3.3	3.5	3.7
3.25	52	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0
3.5	56	1.3	1.5	1.7	1.9	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.9	4.1	4.3
3.75	60	1.4	1.6	1.8	2.1	2.4	2.5	2.8	3.0	3.2	3.4	3.7	3.9	4.1	4.4	4.6
4.0	64	1.5	1.7	2.0	2.2	2.6	2.7	2.9	3.2	3.4	3.7	3.9	4.2	4.4	4.7	4.9
4.25	68	1.6	1.8	2.1	2.3	2.8	2.9	3.1	3.4	3.6	3.9	4.2	4.4	4.7	4.9	5.2
4.5	72	1.7	1.9	2.2	2.5	2.8	3.0	3.3	3.6	3.9	4.1	4.4	4.7	5.0	5.2	5.5

**Nurseries, greenhouses, shadehouses, and ornamental plants**

**Spray application:** Mix **0.5 to 6 quarts of this product per 100 gallons of water** and apply as a foliar spray of sufficient volume to wet the entire plant with minimal runoff. Begin preventative applications at plant emergence and repeat every 3-28 days as needed (every 3-7 days if disease pressure is high or environmental conditions are highly favorable to disease outbreak, 10-28 days under low pressure or less conducive conditions).

**Drench application:** Mix **0.5 to 4.5 pints of this product per 100 gallons of water** and apply as a drench or coarse spray to soil or other growing media in pots, flats, plugs, trays, or planting beds, for control or suppression of soilborne diseases of seedlings, cuttings, bedding plants, and transplants (including vegetables and other transplanted food crops). Make first application at or immediately before seeding, sticking, germination, or transplanting. Repeat applications every 14-28 days as needed. Transplants can be treated immediately before transplanting into field soils to protect against damping-off and other diseases that reduce plant establishment.

**Cutting or root dip:** Dip basal end of cuttings or bare roots (individually or in bunches) in a suspension of **1 to 2 pints of this product per gallon of water**. Immerse for 5-10 seconds immediately before planting.

**Chemigation:** Mix **0.5 to 4.5 pints of this product per 100 gallons of water** and apply via drip, handheld, or sprinkler irrigation systems. Refer to "Chemigation Instructions" for more details.

**Residential Use directions:**

Spray application for control of powdery mildews, leaf spots, anthracnose and gray mold affecting leaves, flowers, fruit, and other above-ground plant parts of home garden plants: Mix 1 teaspoon of this product per gallon of water and apply directly to plants using a hand pump sprayer or other suitable spray equipment.

**Residential Use**

**DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Spray application for control of powdery mildews, leaf spots, anthracnose and gray mold affecting leaves, flowers, fruit, and other above-ground plant parts of home garden plants: Mix 1 teaspoon of this product per gallon of water and apply directly to plants using a hand pump sprayer or other suitable spray equipment. Spray just enough to wet all leaves and fruit with minimal run-off or dripping. Total coverage depends on the size of plants to be sprayed and the type of sprayer used. Repeat as needed to maintain disease control, typically every 7-10 days. If disease is prevalent or environmental conditions such as high humidity favor disease outbreak, increase the mixing rate to 1 tablespoon per gallon and shorten the interval between sprays to every 3-7 days.

Drench application for control of diseases affecting plant roots, tubers, or other parts of plants in contact with soil in the home garden: Mix 1 teaspoon of this product per gallon of water and apply to the soil by one of the following methods:

**[HEMP SUPPLEMENTAL LABEL – dual use]**

1. For potted plants (indoors or outdoors), apply in sufficient water to wet the entire root mass using a watering can or tank-fed watering wand. Do not water plants again until 24 hours after application. Alternatively, use a hand-pump or other sprayer to spray the mixture on the soil surface in each pot, then immediately apply sufficient water to move the product into the roots.
2. Drench the roots of transplants with approx. 4 fluid ounces of the mixture immediately before transplanting into pots or garden soil. Allow to soak into the root ball before transplanting.
3. For outdoor-grown plants, use a watering can or sprayer to drench the soil in the planting furrow or transplant hole immediately before planting or transplanting. The amount of water required will depend on the size of the hole or length of furrow.
4. Alternatively, apply in the first watering after planting or transplanting, either by mixing directly into the water at the rate indicated above, or by spraying onto the soil surface at the base of each plant and immediately watering in with a watering can, hose, sprinkler, or other watering device.

This product can be applied up to and including the day of harvest.

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