

5"

*Bacillus amyloliquefaciens* strain  
ENV503

Group

BM02

Fungicide

# Prephyte ST

A plant growth-promoting rhizobacteria (PGPR)  
 Activates ISR (Induced Systemic Resistance) in Plants  
 Stimulates healthier roots and improves nutrient uptake  
 Activates the plant's defense/immune system (Induced Systemic Resistance [ISR])  
 Provides both anti-fungal and anti-bacterial activity

**Active Ingredient***Bacillus amyloliquefaciens* strain ENV503\* ..... 0.149%**Other Ingredients**..... 99.851%**Total:**..... 100.000%\*Not less than  $5.9 \times 10^9$  Colony Forming Units (CFU) per gram of product

3.75"

## KEEP OUT OF REACH OF CHILDREN

**HOTLINE NUMBER**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-222-1222 for emergency medical treatment information. For information on this product, call the National Pesticide Information Center at 1-800-858-7378, Monday through Friday, 8:00 AM to 12:00 PM Pacific time.

(See interior page for additional precautionary statements)

**DPH Biologicals LLC**

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 Phone: 1-800-648-7626  
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EPA REG NO. 94485-8  
 EPA EST NO. 94485-IL-1

Net Contents: 6.6 oz (187 g)



P-F-PWD-PREPH-6.6OZ

P-3-LBL-PPH6AK-100

## PRECAUTIONARY STATEMENTS

### **Personal Protective Equipment (PPE):**

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Mixer/loaders and applicators must wear NIOSH-approved particulate respirator with any N, R, or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. 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.

**Engineering Controls:** When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protections Standard (WPS) for agricultural pesticides [40 CFR 170.240(d) and (e)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

### **User Safety Recommendations**

User should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

**Environmental Hazards:** 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 OF 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 protect 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 (REI). The requirements in this box only apply to the 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 four (4) hours.

**EXCEPTION:** If the product is soil injected or soil incorporated, the Worker Protections Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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
- Shoes plus socks

## PRODUCT INFORMATION AGRICULTURAL CROPS

### **Product Description:**

Prephyte ST is a broad-spectrum biological fungicide and bactericide for the prevention, control or suppression of many soilborne diseases. Prephyte ST contains the active ingredient *Bacillus amyloliquefaciens* strain ENV503, a plant growth-promoting rhizobacterium that quickly establishes beneficial colonies on the plant's root and leaves. It protects the roots from invading pathogens, stimulates healthier roots and improves nutrient uptake. *Bacillus amyloliquefaciens* strain ENV503 is also known to trigger the plant's immune system (Induced Systemic Resistance (ISR)).

Prephyte ST can be used on all plant material and is most effective when applied prior to the onset of disease. Use Prephyte ST in combination and/or rotation with chemical fungicides and bactericides to enhance disease control and reduce the occurrence of resistance.

For use on the labeled field-grown agricultural crops including: vegetables, herbs, small fruits, berries, fruit and nut trees, and other species listed on this label. For use in greenhouse production and hydroponics.

Follow the most restrictive of the labeling limitations and precautions of all products used in mixture.

### **Modes of Action:**

Prephyte ST has multiple modes of action in preventing, controlling or suppressing plant diseases. Its active ingredient, *Bacillus amyloliquefaciens* strain ENV503, produces broad-spectrum antibiotic lipopeptides (iturin) that disrupt pathogen cell-wall formation and is competitive, fast-colonizing rhizosphere bacterium that occupies the plant's root hairs and leaves. It also prevents the growth and antagonistic effects of soilborne and foliar pathogens. *Bacillus amyloliquefaciens* strain ENV503 is known to stimulate phytohormones, which trigger the plant's systemic resistance to disease (Induced Systemic Resistance – ISR), the defense mechanisms of the plant for prolonged periods of time.

### **PGPR (Plant Growth-Promoting Rhizobacteria):**

*Bacillus amyloliquefaciens* strain ENV503 is within the Plant Growth-Promoting Rhizobacteria (PGPR) classification. PGPR are free-living bacteria that has beneficial effects on plants as they increase plant productivity, enhance crop fertility, growth and root development.

## **INTEGRATED PEST (DISEASE) MANAGEMENT (IPM)**

Prephyte ST is an important tool in sound disease management whenever fungicide use is necessary. Apply Prephyte ST alone or in combination and/or rotation with chemical fungicides. This will result in reduced susceptibility to disease and overall reduction in the use of chemical fungicides. Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.

### **RESISTANCE MANAGEMENT**

For resistance management, Prephyte ST contains a Group BM02 fungicide/bactericide. Any fungal/bacterial populations may contain individuals naturally resistant to Prephyte ST and other Group BM02 fungicides/bactericides. A gradual or total loss of pest control may occur over time if these fungicides/bactericides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

To delay fungicide and bactericide resistance, take one or more of the following steps:

- Rotate the use of Prephyte ST or other Group BM02 fungicides and bactericides within a growing season sequence with different groups that control the same pathogens
- Use tank mixtures with fungicide/bactericide of a different group that are equally effective on the target pest when such use is permitted. Use at least the minimum application rate as labeled by the manufacturer.
- Adopt an integrated disease management program for fungicide/ bactericide use that includes scouting, uses historical information related to pesticide use, and crop rotation, and which considers host plant resistance, impact of environmental conditions on disease development, disease thresholds, as well as cultural, biological and other chemical control practices.
- Where possible, make use of predictive disease models to effectively time fungicide/bactericide applications. Note that using predictive models alone is not sufficient to manage resistance.
- Monitor treated fungal and bacterial populations for resistance development.
- Contact your local extension specialist or certified crop advisor for any additional pesticide resistance-management and/or IPM recommendations for specific crops and pathogens.

### **PREHARVEST INTERVAL – AGRICULTURAL USE**

Prephyte ST can be applied up to and including the day of harvest.

## MIXING AND APPLICATION INSTRUCTIONS

Apply Prephyte ST with spray equipment, including hand-held sprayers; boom sprayers; aerial application systems; specified irrigation systems; and fertigation systems. Fit sprayers applying Prephyte ST with a strainer size of 50-mesh. For proper application, determine the number of acres to be treated, the label use rate and select appropriate volume to give good canopy penetration and coverage of plant parts to be protected. Prepare only the amount of spray solution required to treat the measured acreage. See equipment manufactures instructions for proper use and calibration of equipment, prior to application of Prephyte ST .

### **Tank Mixing:**

Special care must be taken when tank mixing.

- 1) Prepare no more spray mixture than is required for the immediate operation, by determining the treatment rates as indicated in the directions for use and make proper dilutions.
- 2) Thoroughly clean spray equipment before using this product. Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues, can cause product to lose effectiveness or strength.
- 3) Prephyte ST must be diluted with water prior to use. The manufacturer recommends that the user makes a slurry in water prior to adding to the spray tank.
- 4) Partially fill the spray tank with clean water to the  $\frac{3}{4}$  level and then add the specific amount of Prephyte ST to the tank as required. Add the remaining water. Mix thoroughly. Maintain agitation continuously while spraying.
- 5) Avoid allowing the spray mixture to stand for prolonged periods of time prior to use to avoid settling. Vigorously agitate the mixture to redisperse the product prior to application if the mixture has settled. DO NOT allow spray mixture to stand overnight.

**Compatibility:**

Prephyte ST is compatible with many fertilizers, micronutrients, organic materials, wetting agents, adjuvant, surfactants, most fungicides, herbicides and insecticides, however do not combine with other materials if there is no previous experience, or use of the combination to show it is physically compatible and non-injurious under your conditions. Check for compatibility with other products. Prephyte ST has been evaluated for phytotoxicity on a variety of crops under various normal growing conditions. However, testing all crop varieties, in all mixtures and combinations is not feasible. Therefore, prior to treating entire crop, test a small portion of the crop for sensitivity. Consult your DPH Biologicals LLC representative for more information on Prephyte ST compatibility with pesticides, surfactants and fertilizers.

**Restriction:**

DO NOT mix with copper-based fungicides, concentrated acids such as sulfuric acid, solvents, oxidizing agents or bactericides. Consult specific product labels for additional information or restrictions concerning tank mixing. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures.

## Seed Treatment

Consult the manufacturer prior to using Prephyte ST in hopper box, planter box, slurry box or other seed treatment applications at or immediately before planting.

Prepare no more mixture than is required for the immediate operation. When tank mixing with other seed treatment products, observe all directions for use, crop/sites/use rates, dilution ratios, precautions, and limitations that appear on the tank mix partner label(s). No label dosage may be exceeded, and the most restrictive label precautions and limitations must be followed.

For commercial seed treatment: This product does not contain dye. All seed treated commercially with this product must be colored with an EPA-approved dye or colorant of a suitable color to prevent accidental use as food for humans or feed for animals.

The Federal Seed Act requires that bags containing seed treated with this product shall be labeled with the following information: "This seed has been treated with *Bacillus amyloliquefaciens* strain ENV503. Do not use for food, feed, or oil purposes. Store away from feeds and foodstuffs."

Seed Treatment using Prephyte ST	Diseases	Rate per 100 lb of Seed to be Treated
<b>Alfalfa</b>	Damping-off fungus – <i>Rhizoctonia</i> spp. – <i>Pythium</i> spp. Fusarium seedling blight – <i>Fusarium</i> spp.	0.25 to 1.0 oz.
<b>Legume Vegetables including:</b> Green Beans, Snap Bean, Lima Bean, Kidney Bean, Navy Bean, Pinto Bean, Wax Bean, Pole Bean, Garden Pea, Pea and Field Bean, and Soybeans.	Damping-off fungus – <i>Rhizoctonia</i> spp. – <i>Phytophthora</i> spp. – <i>Pythium</i> spp. Fusarium seedling blight – <i>Fusarium</i> spp.	0.33 to 0.5 oz.
<b>Corn</b>	Damping-off fungus – <i>Rhizoctonia</i> spp. – <i>Pythium</i> spp. Fusarium seedling blight – <i>Fusarium</i> spp.	0.25 to 1.0 oz.
<b>Cotton</b>	Damping-off fungus – <i>Rhizoctonia</i> spp. – <i>Pythium</i> spp. Fusarium seedling blight – <i>Fusarium</i> spp.	0.25 oz.
<b>Cut seed Potato</b>	Damping-off fungus – <i>Rhizoctonia</i> spp. – <i>Pythium</i> spp. Fusarium seedling blight – <i>Fusarium</i> spp.	2 oz.



<b>Peanut</b>	Damping-off fungus – <i>Rhizoctonia</i> spp. – <i>Pythium</i> spp. Fusarium seedling blight – <i>Fusarium</i> spp.	0.165 oz. to 1.0 oz.
<b>Wheat and Barley</b>	Damping-off fungus – <i>Rhizoctonia</i> spp. – <i>Pythium</i> spp. Fusarium seedling blight – <i>Fusarium</i> spp.	0.25 to 0.33 oz.
<b>All Other Agricultural Seed:</b> Brassica (Cole) Leafy Vegetables, Cucurbits Vegetables, Fruiting Vegetables, Bulb Vegetables and Root and Tuber Vegetables	Damping-off fungus – <i>Rhizoctonia</i> spp. – <i>Pythium</i> spp. Fusarium seedling blight – <i>Fusarium</i> spp.	0.25 to 1.0 oz.
<b>Other Crop Seed</b>	Damping-off fungus – <i>Rhizoctonia</i> spp. – <i>Pythium</i> spp. Fusarium seedling blight – <i>Fusarium</i> spp.	0.25 oz. to 1.0 oz.

## STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store in a dry place out of direct sunlight and away from heat sources. Keep from overheating or freezing.

**Pesticide Disposal:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**Container Handling:**

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  $\frac{1}{4}$  full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or reconditioning if appropriate, 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.

## Warranty and Disclaimer Notice

The directions for use of this product are believed to be adequate and must be followed carefully, it is impossible to eliminate all risk inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result due to such factors as weather conditions, presence or absences of other materials, or the manner of use or application, all of which are beyond the control of DPH Biologicals LLC, the manufacturer, or the seller.

To the extent consistent with applicable law, the products sold to you are furnished "as is" by DPH Biologicals LLC. The manufacturer and the seller are subject only to the manufacturer's warranties, if any, which appear on the label of the product sold to you. Except as warranted by this label, DPH Biologicals LLC, the manufacturer, or the seller makes no warranties, guarantees, or representations of any kind to the buyer or the user, either express or implied, or by usage of trade, statutory or otherwise, with regard to the product sold for use of the product, including, but not limited to merchantability, fitness for a particular purpose or use, or eligibility of the product for any particular trade usage. To the extent consistent with applicable law, Buyer's or user's exclusive remedy, and DPH Biologicals LLC, the manufacturer's or the seller's total liability shall be limited to damages not exceeding the cost of the product. No agent or employee of DPH Biologicals LLC, or the seller is authorized to amend the terms of this warranty disclaimer or the product's label or to make a presentation or recommendation different from or inconsistent with the label of this product.

To the extent consistent with applicable law, DPH Biologicals LLC, the manufacturer, or the seller shall not be liable for consequential, special, or indirect damages resulting from the use, handling, application, storage, or disposal of this product or for damage in the nature of penalties, and buyer and the user waive any right that they may have to such damages.



5.75"

<i>Bacillus amyloliquefaciens</i> strain ENV503	Group	BM02	Fungicide
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**Other Ingredients** ..... 99.851%

**Total:** ..... 100.000%

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