

# Biophos® Pro

**Systemic Fungicide**

**FOR CONTROL OF CERTAIN DISEASES IN ORNAMENTALS, TURF GRASSES AND BEARING AND NON-BEARING AGRICULTURAL CROPS**

**ACTIVE INGREDIENTS\*:**

Dipotassium phosphonate .....	20.40%
Dipotassium phosphate .....	22.67%

**OTHER INGREDIENTS:**

.....	56.93%
<b>TOTAL:</b> .....	<b>100.0%</b>

\* Contains 2.24 lb/gallon Dispotassium phosphonate. Equivalent to 1.1613 lb/gallon (10.576% by weight) phosphorous acid.

\* Contains 2.24 lb/gallon Dispotassium phosphate. Equivalent to 1.3954 lb/gallon (12.756% by weight) phosphoric acid.

## KEEP OUT OF REACH OF CHILDREN CAUTION

<b>FIRST AID</b>	
<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>
<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 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 mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>

**HOTLINE LINE NUMBER — CHEMTEL (800) 255-3924 — 24 hours**

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

EPA Reg. No. 72499-1-72159

EPA Est. No. 72499-GA-001

**Net Contents: 1 Gallon**

Manufactured by: Foliar Nutrients, Inc.  
 320 1st Avenue, N.E., POB 479, Cairo, GA 39828

Marketed by: **AGRISEL USA INC. TOLL FREE: 1-877 AGRISEL**

12/09

**SEE INSIDE BOOKLET FOR ADDITIONAL PRECAUTIONARY STATEMENTS.**

## **PRECAUTIONARY STATEMENTS**

### **HAZARDS TO HUMANS & DOMESTIC ANIMALS**

CAUTION. Harmful if inhaled or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling.

### **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Applicators and other handlers must wear long-sleeved shirt, long pants, waterproof gloves and shoes plus socks. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, 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. Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

### **ENVIRONMENTAL HAZARDS**

This pesticide is toxic to birds, fish, aquatic invertebrates and honey bees. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean highwater mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from treated areas. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

## **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. Do not apply through any type of irrigation system. **Not registered for use in California.**

## 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 entry into treated areas during the restricted-entry interval (REI) of 12 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, wear: coveralls, shoes plus socks and 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 pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

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

**FAILURE TO FOLLOW DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR DISEASE CONTROL OR ILLEGAL RESIDUES.**

## APPLICATION DIRECTIONS

### ORNAMENTALS -

(Commercial and Agricultural Use) Apply BIOPHOS™ PRO Fungicide as a soil drench (0.10%-2% v/v) in water to wet the root zone, and as a foliar spray (1-2%) to run-off. A 1% dilution is achieved by mixing 1 gallon of BIOPHOS™ PRO Fungicide with 99 gallons of water. A 0.1% dilution is achieved by mixing 12.8 oz. with 99.9 gallons of water. For drench applications, use 1 pint diluted in water per sq. ft. for soils 4-inches in depth or less, and 2 pints diluted in water per sq. ft. for soils with depths greater than 4-inches., Use the higher rate for greater disease pressure. make repeat applications every two to three weeks.

(Residential; Home & Garden Use) For preventative control of certain diseases in ornamentals. For soil drench, apply BIOPHOS™ PRO Fungicide at a 0.5% dilution. Mix 1/8 cup (2 tbsp) of BIOPHOS™ PRO Fungicide per gallon of water, and apply with a watering can or other device so as to wet the root zone. For foliar application, apply BIOPHOS™ PRO Fungicide at a 1% dilution. Mix 1/4 cup (4 tbsp) per gallon of water and apply with a hand or backpack sprayer. Apply to run-off. Make repeat applications every two to four weeks.

**PLANT TOLERANCE** - BIOPHOS™ PRO Fungicide has been found to be safe for representative plant species listed below; however many varieties and cultivars have not been tested. To determine whether BIOPHOS™ PRO Fungicide can be safely used on other plants or sensitive varieties/cultivars, test a small area first. The following plants have been tested with good tolerance and safety to BIOPHOS™ PRO Fungicide.

Apple	Cypress	Juniper	Pear	Schefflera
Aglaonema	Daylily	Lantana	Persimmon	Spathiphyllum
Aphelandra	Dieffenbachia	Leather-leaf fern	Philodendron	Spruce
Azalea	Dogwood	Ligustrum	Photinia	Syngonium
Boxwood	Ficus	Magnolia	Pieris	Taxus
Bougainvillea	Fir	Maple	Pine	Viburnum
Cattelya	Geranium	Marigold	Pittosporum	Vinca
Chrysanthemum	Hawthorne	Mimosa	Plum	Zinnia
Cissus	Hibiscus	Oak	Poinsettia	
Cleyera	Holly	Palm	Pyracantha	
Crape myrtle	Hydrangea	Pansy	Rhododendrom	
Cycads	Ivy	Peach	Rose	

BIOPHOS™ PRO Fungicide has been proven effective against a wide spectrum of pathogens such as powdery mildews (*Oidium*, *Phyllactinia*, *Erysiphe* and *Sphaerotheca*), leaf spots, stem cankers and scabs caused by *Alternaria*, *Botryosphaeria*, *Cladosporium*, *Entomosporium*, *Elisinoe*, and *Taphrina*, rusts caused by *Puccinia* and *Cronartium*, as well as root rots and blights caused by *Pythium*, *Phytophthora* and *Thielaviopsis*, and downy mildews. BIOPHOS™ PRO Fungicide can also be used for the control/suppressions of *Erwinia* fire blight and bacterial blights/leaf spots caused by *Xanthomonas* and *seu-domonas*.

#### **NON-BEARING CITRUS AND NURSERIES:**

For control of citrus *Alternaria* leaf spot, make foliar applications at 1-2% v/v as new flush first appears and continue at 2-3 week intervals until the foliage is mature. Repeat the sequence with each additional growth flush. For *Phytophthora* root rot,

make soil or foliar applications at 1-2% v/v or in water to wet the root zone or to run-off the foliage. For control of *Phytophthora* root rot make foliar applications at 1-2% v/v up to run-off. For soil applications apply 1-2 gallons per acre in water to wet the root zone or for containerized trees, use 1-2% v/v drench to wet the roots.

#### NON-BEARING PEACHES:

For control of peach Gummosis (*Botryosphaeria dothidea*), make applications of 1-2% v/v to the tree as the new flush first appears in early spring in water to affect a run-off and wet the branches and trunk. Repeat applications at a monthly interval during the growing season.

#### NON-BEARING PECANS:

For control of foliar pecan scab (*Cladosporium caryigenum*). Infections of foliage occur early as new foliage first emerges. Make first application of 1-2% v/v at first emergence and repeat at 3-4 week intervals until leaves have matured.

#### NON-BEARING BLUEBERRIES (HIGHBUSH AND RABBITEYE):

For control of rust (*Pucciniastrum myrtilli*) and *Septoria albopunctatum*, apply foliar applications of 1-2% v/v in early Spring when new foliage emerges and continue on a 3-4 week interval for the remainder of the growing season. For *Phytophthora* root rot control, apply 1-2% v/v as a soil application to the bed as a surface spray in early spring and in later summer.

#### NON-BEARING GRAPES:

For control of downy mildew (*Plasmopora viticola*) and powdery mildew (*Oidium*), apply foliar applications of 1-2% v/v on a 3-4 week interval during the growing season.

#### TURF:

BIOPHOS™ PRO Fungicide is a systemic fungicide for use in a seasonal program for the control of *Pythium* diseases, such as blight and root rot, and Yellow tuft on turf grasses on golf courses, sod farms, overseeded bermudagrass and other turf areas. Apply as a foliar spray using 1-5 gallons of water per 1,000 sq. ft. as indicated in the table below. Apply with a properly calibrated sprayer.

DISEASE	APPLICATION INTERVAL	RATE fl. oz./1000 sq. ft.
<i>Pythium</i> diseases, Yellow tuft	14-21 days	8.0 to 16.0
<i>Helminthosporium</i> leaf spot	14-21 days	8.0 to 16.0
<i>Magnaporthe</i> summer patch	14-21 days	8.0 to 16.0
Powdery mildew	14-21 days	8.0 to 16.0
Bentgrass Dead Spot ( <i>Ophiosphoerella</i> )	14-21 days	8.0 to 16.0

Begin preventative, applications when conditions first favor disease and repeat at the application interval identified. Do not mow or water treated areas until foliage is completely dry.

**TURFTANK MIXES** - Summer Decline/Summer Stress Complex: Use BIOPHOS™ PRO Fungicide for a control of Summer Decline/Summer Stress caused by a complex of *Pythium* and *Rhizoctonia* diseases, and for control of Anthracnose caused by *Colletotrichum*, on turf grasses on golf courses, sod farms and other turf areas. BIOPHOS™ PRO Fungicide can be tank mixed with chlorothalonil fungicides at labeled rates, unless a product label prohibits such mixing. Apply as a foliar spray using 1-5 gallons of water per 1,000 sq. ft. as indicated in the table below. Apply with a properly calibrated sprayer.

PRODUCT	DISEASE	APPLICATION INTERVAL	RATE FL. OZ./1000 sq.ft.
BIOPHOS™ + Daconil Ultrex or Concorde DF	Summer Decline	14 days	8.0 to 16.0 fl. oz. + 3.2 oz. 3.2 oz.
BIOPHOS™ + Daconil Ultrex or Concorde DF	Summer Decline	14 days	8.0 to 16.0 fl. oz. + 3.2 oz. 3.2 oz.

Begin preventative, applications when conditions first favor disease and repeat at the application interval identified. Do not mow on water treated areas until foliage is completely dry.

**AGRICULTURAL CROPS:**

**Application Rate:** Begin spraying when environmental conditions are favorable for the development of disease or as indicated below. Preventative treatments are the most effective, and rotation with other registered fungicides is recommended. Do not apply above the recommended rates. Unless specified, there is no limit to the number of applications. Use a minimum of 25 gallons per acre in all applications. See Dilution Table below.

	<b>25 Gallons of Solution/Acre</b>	<b>50 Gallons of Solution/Acre</b>	<b>75 Gallons of Solution/Acre</b>	<b>100 Gallons of Solution/Acre</b>
<b>1 1/2% Solution</b>	16 fl. oz product + 24 gal and 112 fl. oz water	32 fl. oz product + 49.75 gal water	48 fl. oz product + 74 gal and 80 fl. oz. water	1/2 gal product + 99.5 gal water
<b>1% Solution</b>	32 fl. oz. product 24.75 gal. water	1/2 gal. product + 49.5 gal. water	96 fl. oz. product + 74 gal. and 32 fl. oz. water	1 gal. product + 99 gal. water
<b>2% Solution</b>	1/2 gal. product + 24.5 gal. water	1 gal. product + 49 gal. water	1 1/2gal. product + 73.5 gal. water	2 gal. product + 98 gal. water

<b>Crop</b>	<b>Disease</b>	<b>Rate/Acre (v/v)</b>	<b>Remarks</b>
<b>Avocado</b>	Root rot <i>(Phytophthora)</i>	2%	Make four preventative foliar applications with spray volumes of 125-300 gal/acre; twice (at 10 to 14 day intervals) in each of two root growth seasons (usually May and July). Avoid applying during period of foliar growth.
<b>Blueberry*</b>	Phytophthora root rot <i>(Phytophthora spp.)</i> Alternaria fruit rot <i>(Alternaria tenuissima)</i> Rust <i>(Pucciniastrum myrtil)</i>	2%	Begin foliar applications at pink bud stage in the spring, and continue on a 14 to 21 day interval in a minimum of 30 gallons of water per acre.

Crop	Disease	Rate/Acre (v/v)	Remarks
<b>Brassica vegetables</b> , such as: <b>Broccoli, cabbage cauliflower</b>	Downy Mildew Blackrot ( <i>Xanthomonas campestris</i> )	1 - 2% <sup>1</sup>	Make preventative foliar applications at 7 to 10 day intervals. Use sufficient water to obtain adequate coverage.
<b>Bulb vegetables</b> , such as: <b>Garlic, onion, shallot</b>	Downy Mildew	2% <sup>1</sup>	Make preventative foliar applications at one-week intervals with a spray volume of 25-40 <sup>2</sup> gal/acre depending on size of plants. <sup>3</sup> Use sufficient water to obtain adequate coverage.
<b>Citrus</b> , such as: <b>Grapefruit, kumquat, lemon, lime, orange</b>	Brown Rot and Root rot ( <i>Phytophthora</i> )	2%	Make preventative foliar applications when conditions favor disease development, usually three times annually (March-April, May-June, and Sept.-Oct.). Spray to wetness, about 100-250 gal/acre. Apply soil applications using a 2% solution in 25 50 gal/acre beneath the tree line. Make soil applications in May and a second application in August, if needed.
	Greasy spot ( <i>Mycosphaerella citri</i> )	2%	Make preventative foliar applications when conditions favor disease development in sufficient water to achieve thorough coverage. fresh market applications should be made in mid May, July and August. Make all other citrus applications in May and August.
	Brown spot* ( <i>Alternaria alternata</i> )	2%	Make applications in sufficient water to achieve full coverage. Begin applications starting first as a dormant application, followed by a 2nd application at early flush. Continue applications on a 3-4 week interval or until conditions are no longer conducive for the disease.



Crop	Disease	Rate/Acre (v/v)	Remarks
<b>Curcubits</b> , such as <b>Cucumber, melon, pumpkin, squash</b> (in open field and under coverage)	Downy mildew Powdery mildew ( <i>Oidium spp.</i> )	1 - 2% <sup>1</sup>	Make preventative foliar applications at one-week intervals with a spray volume of 40-100 gal/acre, depending on size of plants. Use sufficient water to obtain adequate coverage.
<b>Fruiting vegetables</b> , such as: <b>Tomato, tomatillo, peppers</b>	Late Blight ( <i>Phytophthora infestans</i> )	2% <sup>1</sup>	Make preventative foliar applications starting no sooner than 6 weeks after seeding or 4 weeks after transplanting. Apply at 7 to 14 day intervals. <sup>3</sup> Thorough coverage is required. As the crop matures, the response is greatly reduced, requiring the use of other fungicides.
<b>Ginseng*</b>	Crown and Fruit	1 gallon	Make soil applications in 25 to 50 gallons of water and mechanically incorporate in the top 2-3" of soil before planting. Make applications in 100 gallons of water per acre beginning in the spring when conditions first become conducive to the disease. Repeat applications on a 7-day interval as long as conditions remain favorable for the disease. Do not apply more than 9 sprays a season.
<b>Grapes</b> , such as: <b>Carignane, French Columbard, Cabernet, Sauvignon, Superior, Thompson, Parlet</b>	Downy Mildew	2% <sup>1</sup>	For preventions of downy mildew. During the sensitive period, spray before the appearance of the disease, every 7 to 10 days with a spray volume of 50 gpa pre-bloom and 100 gpa postbloom. <sup>3</sup> Use sufficient volume to obtain adequate coverage.
<b>Leafy vegetables</b> , such as: <b>Lettuce, Spinach</b>	Downy Mildew	1 - 2%	Make preventative foliar applications at 7 to 10 day intervals with a minimum spray volume of 25 gal/acre. <sup>3</sup> Begin spraying at 2 to 4 leaf stage of growth.

Crop	Disease	Rate/Acre (v/v)	Remarks
Legume vegetables, such as: Lima Beans	Downy Mildew ( <i>Phytophthora phaseoli</i> )	2%	Start applications at flowering using at least 25 gallons of water. Repeat on a 7-day interval while conditions are favorable for the disease.
Pineapple*	Heart rot	Preplant Dip: 1% Established Plantings: 2%	Apply foliar sprays when conditions are conducive for disease development, or are forecast, continue applications on a 3-month interval. Use sufficient water to insure complete coverage.
Pome Fruit*, such as: Apple, Pear	Collar and Root rot ( <i>Phytophthora spp.</i> )	2%	Apply in 100 gallons of water per acre (thorough spray coverage is required) when conditions favor disease development, and continue on a 30-60 day interval. Use the low rate at the shorter interval, and the high rate at the longer interval. For scab apply first application at 1/2" green tip. Repeat at 7-14 day intervals.
Potatoes	Late Blight ( <i>Phytophthora infestans</i> )	2% <sup>1</sup>	Make preventative foliar applications starting no sooner than 6 weeks after seeding or 4 weeks after transplanting. Apply at 7 to 14 day intervals. Thorough coverage is required. As the crop matures, the response is greatly reduced, requiring the use of other fungicides.
Strawberry	Red Stele ( <i>Phytophthora fragariae</i> )	2%	Apply for 15-30 minutes as a pre-plant dip to the roots and crowns. Plant within 24 hours of dipping. Annual Planting: Begin foliar applications 2-3 weeks after planting and repeat on a 30-60 day interval if the weather is conducive to the disease. Use the shorter interval and higher use rate on the susceptible varieties, or under heavy disease pressure.

Crop	Disease	Rate/Acre (v/v)	Remarks
Strawberry*, <i>cont'd.</i>	Leather rot	1 - 2 %	Begin applications at 10% bloom. Continue spraying on a 7-14 day interval through fruit set while conditions are favorable for disease. Use the high rate and shortest interval under heavy disease pressure.
Stone Fruit*, such as: Peaches, Plums	Collar and Root rot ( <i>Phytophthora spp.</i> )	2%	Apply in the spring when conditions are conducive to the disease. Use 100 gallons per acre and repeat on a 60-day interval, as necessary. Do not make more than 4 sprays per year.
Tree Nuts such as: Almonds	Collar and Root rot	2%	Apply in the spring when conditions are conducive to the disease. Use 100 gallons per acre and repeat on a 60-day interval, as necessary. Do not make more than 4 sprays per year.

\*Not for use in California.

Notes:

1. Use higher rate when conditions favor disease development and/or with increased disease pressure.
2. Use a low spray volume, so that the material does not wash off or drip to the ground.
3. For prevention of downy mildew and late blight in bulb, fruiting and leafy vegetables, and grapes, combine BIOPHOS™ PRO Fungicide treatment with additional protective products, by tank-mix or by alternating treatments.

**COMPATIBILITY** - Do not mix BIOPHOS™ PRO Fungicide with any copper based fungicides or any sticker, extender, or wetting agent. To determine the physical compatibility of BIOPHOS™ PRO Fungicide with any other product, use a small container to mix a small amount (e.g. 1 pint) of spray solution, containing all ingredients in the same order and ratio as the anticipated use. If any indication of physical incompatibility develops, do not use this mixture for spraying. Incompatibility usually appears within 5-15 minutes after mixing. Read and follow all directions on this label and on the labels of any products for which a tank mixture is being considered.

#### **STORAGE AND DISPOSAL (Commercial and Agricultural Use)**

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

**Pesticide Storage:** Store unused product in original container only in a cool, dry area out of reach of children and animals. DO NOT FREEZE.

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

**Container Disposal:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incinerator, or if allowed by State and Local authorities, by burning. If burned stay out of smoke.

#### **STORAGE AND DISPOSAL (Residential; Home & Garden Use)**

**STORAGE:** Store unused product in original container only in a cool, dry area out of reach of children and animal. DO NOT FREEZE.

**DISPOSAL: If empty** - Do not reuse this container. Place in trash or offer for recycling if available. **If partly filled** - Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

#### **WARRANTY STATEMENT**

FOLIAR NUTRIENTS, INC. warrants that this product in its unopened package conforms to the chemical description on the label and is reasonably fit for the purposes set forth on the label when used according to directions under normal use conditions on the crops specified. There are no other warranties, expressed or implied, concerning the use of this product other than indicated on the label.