



# FOLIAGE PLANT APPLICATION GUIDELINES

October 2002

The broad-spectrum disease control of Phyton-27® helps take the guesswork out of your pesticide applications. Control the toughest bacterial and fungal diseases on all your foliage plants.

## Bacterial Diseases

### *Erwinia*

The most common bacterial pathogens of foliage plants are species of *Erwinia*. Symptoms vary with species of bacteria and host plant, from soft rot to stem rot, root rot, leaf spot and blight. *Erwinia* likes warm, to hot temperatures with plenty of moisture. Wounded or stressed plants are prime targets for infection.

### *Xanthomonas*

*Xanthomonas* sp. cause leaf spots and blight on a wide variety of foliage crops. The bacterium likes high relative humidity and temperature for optimal disease development. On some crops, the bacteria will be systemic throughout the plant while on other crops leaf spot may be localized in symptomatic foliage.

### *Pseudomonas*

*Pseudomonas* sp. cause leaf spots and blight on a wide variety of foliage crops. Optimal temperature for disease development varies with species but tends to be cooler than temperatures preferred by *most Xanthomonas* sp.

For prevention of Bacterial Diseases, apply Phyton-27® at 7 to 14 day intervals. Apply at any time of the crop cycle. Low or high volume applications may be used along with low dosage rates for preventive maintenance. Consult the Phyton-27® label for specific rates and application directions.

When Bacterial Diseases are visibly present, remove visibly diseased plants or leaves from the growing area. Spray every 5 to 7 days during heavy disease pressure. For established bacterial infections, wet sprays may be more effective than low volume applications. Consult the Phyton-27® label for specific rates and application directions.

In propagation, dip cuttings a few seconds prior to sticking or srench cuttings 2 to 3 days after sticking. Under severe disease pressure, srench again in 7 to 10 days.

## Fungal Diseases

### *Cylindrocladium*

*Cylindrocladium* root and petiole rot can cause devastating losses in spathiphyllum production. Infection occurs most frequently in outdoor grown plants in warm, humid growing areas and in warm greenhouses. Losses to this disease are uncommon during cooler periods of the year as fungal growth slows. The fungus overwinters in infected plants and symptoms will reappear when warm temperatures return.

### *Phytophthora*

*Phytophthora parasitica* causes aerial blight and root rot on spathiphyllum. Irrigation and rainfall trigger zoospore release by causing a drop in temperature and providing free water. Splashing water can move the zoospores from the soil to the leaves initiating aerial blight. Under humid conditions, leaf lesions can produce additional zoospores that will spread the disease to surrounding foliage and back to the growing media.

### *Rhizoctonia*

*Rhizoctonia solani* causes a root rot as well as an aerial blight and leaf spot on foliage plants including ferns. Rhizoctonia aerial blight, one of the most common diseases on ferns, is most likely to occur in the summer or warmer months when the humidity and temperature are both high. This is a soil borne fungus that splashes up onto the foliage.

### *Botrytis & Powdery Mildew*

*Botrytis* and Powdery Mildew are much less common diseases of foliage plants, but when the environmental conditions are right, they can cause significant losses. Both diseases are more likely to occur during the fall transitional weather or the cooler winter weather.

For prevention of Fungal Diseases, apply Phyton-27® at 7 to 14 day intervals. Apply as a spray or drench at any time of the crop cycle. Low or high volume applications may be used along with low dosage rates for preventive maintenance. Consult the Phyton-27® label for specific rates and application directions.

When Fungal Diseases are present, remove infected leaves to reduce inoculum levels in the growing area. Spray or drench every 5 to 7 days during heavy disease pressure. For established powdery mildew infections, wet sprays may be more effective than low volume applications. Consult the Phyton-27<sup>®</sup> label for specific rates and application directions.

In propagation, dip cuttings a few seconds prior to sticking or sprinch cuttings 2 to 3 days after sticking. Under severe disease pressure, sprinch again in 7 to 10 days.

## Partner in Propagation

A clean start in propagation is the first step towards a healthy crop. Propagation is a stressful time, under the best of conditions: the stress of removing cuttings from the stock plant, and open wound, and the additional stress during shipping. Phyton-27<sup>®</sup> is tough on diseases in stock plants yet gentle on new cuttings. It is systemically taken up by the plant within hours of application, so it won't be washed off by mist, irrigation or rain. Timely applications of Phyton-27<sup>®</sup> will give you higher yields of top quality cuttings.

Stock Plants - Apply Phyton-27<sup>®</sup> a few days before taking cuttings. The systemic bactericidal and fungicidal protection of Phyton-27<sup>®</sup> will be in place to protect the cuttings in the propagation house, keeping them clean from the inside out.

Cuttings - Regular Preventive Program - Whether you take your own cuttings or have cuttings shipped in, a few days after transplant is the time to start a regular preventive spray program with Phyton-27<sup>®</sup>. A sprinch application after transplant does a good job of cleaning up the outside of the cutting and the growing area immediately surrounding the cutting. Continue regular applications every 7 to 10 days until the cutting is rooted, well established, and humidity levels are reduced since systemic uptake early in propagation may be limited due to lack of roots and the waxy or woody cuticle.

## Effective at Stress Points

Phyton-27<sup>®</sup> is effective during the stressful transitions foliage plants go through - propagation, transplant, shipping, or the transition from the tissue culture laboratory to the greenhouse.

## Labeled for Use in the Interiorscape

Phyton-27<sup>®</sup> is one of the few products labeled for use in the interiorscape. Use as a spray or drench to keep foliage healthy after the sale with no odor or residue.

## Gentle Enough for Tissue Culture

Phyton-27<sup>®</sup> is tough, yet gentle enough to use in tissue culture. It cleans up "generic" bacterial infections that may be lingering on or in the mother plants before you take cuttings and cleans up the explants from those cuttings. Phyton-27<sup>®</sup> is safe to use on microcuttings and plantlets coming out of tissue culture. It will keep the microcuttings clean during shipping and the transition phase from the laboratory to the greenhouse.

## General Use Guidelines

**Chemigation** - Phyton-27<sup>®</sup> is labeled for use through overhead sprinklers. See the label for chemigation use directions, equipment, and posting requirements.

**Tank Mixes** - Phyton-27<sup>®</sup> is reported compatible with many registered pesticides. Before using combinations for general applications, test for physical compatibility and noninjury under your conditions of use. Do not tank mix Phyton-27<sup>®</sup> with B-Nine or strongly acidic compounds such as Aliette and do not apply Phyton-27<sup>®</sup> within 14 days either before or after the application of such products.

**Adjuvants** - Before using additives for general applications, test for physical compatibility and noninjury under your conditions of use. Most nonionic spreaders are compatible, but avoid stickers, penetrants and horticultural oils. Use ionically active spreaders only at low rates.

**pH Level** - Preferred pH range for the spray or drench solution is 5.5 to 6.5. Use any acidification method to adjust to this range. Phyton-27<sup>®</sup> concentrate has a pH of 4.7 and may contribute to lowering the pH of the mixed solution.



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