

PhytonNews

Growers rely on Phyton27®

Rediscover Phyton-27

Are you aware of the broad-spectrum of applications and quality benefits and application of Phyton-27® delivers? The reliable disease control of Phyton-27® has earned the trust of savvy growers around the United States, but many growers are only familiar with one or two of the many disease control that Phyton-27® offers. Phyton-27® offers broad labeling in terms of where, on what, when and how it can be applied. The unique, systemic formulation delivers dependable disease control with excellent plant safety and no residue.

Application Sites

Phyton-27® has EPA labeling for application in the greenhouse, field (nursery), landscape and the interior.

Host Plants

The Phyton-27® label covers application on annual & perennial bedding plants, flowering potted plants, cut flower crops, tropical foliage plants, woody nursery crops, and non-bearing fruit trees and vines. The language "such as but not limited to" allows application on all ornamental plants.

Target Diseases

The systemic copper-based activity of Phyton-27® delivers broad-spectrum protection against a wide range of bacterial and fungal diseases including:

Fungal	
Botrytis	Entomosporium
Powdery Mildew	Downy Mildew
Rust	Phytophthora
Cylindrocladium	Alternaria
Rhizoctonia	Colletotrichum
Black Spot	

Bacterial
Erwinia
Pseudomonas
Xanthomonas
Crown Gall

When to Apply

Phyton-27® can be used from propagation throughout production, right up to the finish of the crop without residue. It is gentle on most tender plant tissue at all stages of the growth cycle, including seedlings, developing roots, cuttings and most open blooms.

How to Apply

You can apply Phyton-27® as a hydraulic or low-volume spray, soil drench, fog, cut flower dip, cutting dip, bulb dip, tree trunk injection and through a chemigation system.

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DO NOT FREEZE - COLD WEATHER STORAGE

Phyton-27® concentrate is sensitive to cold temperatures and must be shipped and stored above 45 degrees F. Check your storage facilities to guard against unexpected cold damage. If there is a possibility that a bottle of Phyton-27® has been exposed to cold temperatures, give us a call to discuss plant safety issues and possible disposal or soil drench use of damaged product.

FULLY SYSTEMIC ACTIVITY

Phyton-27[®] delivers fully systemic anti-bacterial and antifungal disease control that is rapidly absorbed and moves throughout the plant, providing effective disease control against internal pathogens as well as pathogens on the plant surface. Its unique composition goes beyond the surface disease control of fixed copper products without the heavy deposits and phytotoxicity often associated with surface copper. Phyton-27[®] works within the plant to provide integral disease control and often enhances overall plant health and vitality.

The systemic protection stays in the plant and won't be washed away by rain, misting or overhead irrigation.

Rapidly Absorbed

Rapid absorption of Phyton-27[®] was documented at A & L Agricultural Laboratories in Florida, by tracking the amount of copper remaining on the surface of the leaf, as measured by copper ppm in leaf wash water. Surface copper levels dropped back to pre-treatment levels within 2 hours after foliar treatment with Phyton-27[®]. Foliar absorption was confirmed by monitoring the copper levels in the leaves following Phyton-27[®] application, with copper increasing dramatically and staying elevated for at least 2 weeks.

Translocation: Up, Down & Across

Upward, downward and horizontal movement of Phyton-27[®] within the plant was documented in studies at Ohio State University and A & L Agricultural Laboratories in Florida.

Phyton-27[®], applied as a drench, is absorbed by the roots and moves upward in the plant with copper levels in the foliage increasing dramatically and staying elevated for 2 to 4 weeks post-treatment.

Phyton-27[®], applied as a foliar spray, moves laterally across the plant from sprayed to unsprayed tissue and downward to the roots.

Bacterial Disease Control

Plant pathogenic bacteria cause a variety of symptoms including leaf spots, vascular wilt, soft rots, galls, bud rot and cankers. The most commonly battled bacteria in plant production are *Erwinia*, *Pseudomonas*, *Xanthomonas*, *Acidovorax*, and *Agrobacterium* (crown gall) species.

There are very few chemical weapons on the market to prevent and control bacterial diseases. Growers have come to rely on copper products to battle these diseases. When it comes to copper, Phyton-27[®] provides superior systemic control of bacterial diseases with the benefits of excellent plant safety at all stages of production and no residue.

Fungal Disease Control

A variety of fungi infect ornamental plants. While there are many fungicides on the market for controlling diseases on ornamental plants, few have the broad spectrum power of Phyton-27[®]. This becomes a distinct advantage when you aren't quite sure what disease is eating at your plants, but you need to do something right away.

Phyton-27[®] controls a wide range of fungal diseases including *Botrytis*, powdery mildew, downy mildew, black spot, *Colletotrichum* (anthracnose), rust, *Cercospora*, *Cylindrocladium*, *Alternaria*, *Rhizoctonia*, *Phytophthora*, and *Verticillium*. While used mainly as a foliar spray, Phyton-27[®] can also be used as a soil drench for root and crown diseases.

Phyton-27[®] Profitable Propagation

Preventing and controlling disease is critical in propagation. Whether you start from seeds, cuttings, divisions or grafts, Phyton-27[®] controls the toughest diseases while being surprisingly gentle on germinating and emerging seeds, unrooted and rooting cuttings, healing and regenerating divisions, graft unions and tissue culture explants and plantlets.

Seedlings

Apply Phyton-27[®] as a soil drench or sprench shortly after sowing and/or emergence to help control damping off pathogens including *Botrytis*, *Rhizoctonia*, *Phytophthora* and *Pythium*.

Cuttings

Clean up mother plants before taking cuttings and treat cuttings at or shortly after sticking. Apply to stock plants a few days before taking cuttings to allow systemic uptake. A few days after transplant is the time to start a regular preventive program with Phyton-27[®]. Watch for increased cutting take, particularly on hard to root material.

Grafting

Improve graft take with a spray on scion wood and root stock prior to grafting. Follow up with a dip of the cut end of the scion and/or one or two applications on the grafted material at 10 to 14 day intervals.

Tissue Culture

Use Phyton-27[®] at low, preventive rates on plant material going into and coming out of tissue culture with no phytotoxicity. To check for plant safety, start with the lowest labeled spray rate for the specific type of plant.

Hot Topics for Cold Weather Crops

Give your crops Cold Weather Disease Insurance with Phyton-27®. As the weather cools down, look for these cool weather pathogens to turn up the heat. The bactericidal/fungicidal activity of Phyton-27® protects your winter crops from pathogens lurking in the growing and storage areas and cleans up hitchhiking pathogens on incoming cuttings, liners, and plants.

Downy Mildew

Cold, wet weather is no problem for downy mildew. This water mold particularly likes alternating periods of cool, wet weather and warmer days. Downy mildew is host specific so it won't spread from snapdragons to pansies.

The disease gets its name from the downy-like, white to purplish-gray spores that typically appear on the undersides infected leaves. Because this fungus hides on the undersides of the leaves, look for pale green to yellow or purplish discolored areas on the upper leaf surfaces. If you see this type of symptom, turn the suspect foliage over and inspect the lower surfaces for the hidden fungus.

When dealing with downy mildew, Phyton-27® works best as a preventive treatment. It provides therapeutic control if the disease is caught early. If downy mildew is present, remove visibly infected plants and apply Phyton-27® to prevent spread to new growth and uninfected plants.

Botrytis Blight

Cool, damp, cloudy weather is ideal for Botrytis infection. This fungus loves the cooler temperatures found in many winter greenhouses. It is also a notorious postharvest and storage problem.

Botrytis can cause a variety of symptoms including damping off or seedling blight, flower blights and bud rots, leaf spots or blights, cutting rots and stem cankers. The first symptom is often a water-soaked or browning of infected tissue. When there is plenty of moisture and high humidity around, a tan-to-gray fuzzy mold develops on infected tissue.

Botrytis can pose a serious threat during storage and shipping. The cool temperatures, high humidity and poor air circulation encourage infection and growth of the fungus, while mechanical injury during shipping provides a point of entry.

Apply Phyton-27® prior to cooling, boxing/sleeving or shipping to insure clean, top quality plants for your customer.

Pseudomonas

The *Pseudomonas* bacterium infects a wide range of ornamental plants including bedding plants, foliage crops and potted flowering crops. *Pseudomonas syringae* is the "cool-weather" bacterium.

Symptoms vary depending on the host plant. Most leaf spots start as small, watersoaked lesions that develop into dark brown to black, tan or gray colored leaf spots.

Apply Phyton-27® as a foliar spray or cutting dip to control bacterial leaf spot during propagation and throughout production. Rates vary with host plant, so consult the label for the specific crop that you are treating.

GERANIUM DISEASE PRIMER

Xanthomonas Blight

Symptoms vary depending on the cultivar and environmental conditions. Early on, look for plants that aren't growing well or that exhibit wilting leaves. The petiole will often remain turgid, giving an "umbrella" appearance to the wilt. Other symptoms include yellow-to-brown, v-shaped lesions. Infected cuttings may fail to root and slowly rot from the base upwards.

Pseudomonas Leaf Spot

Pseudomonas leaf spot on geranium looks similar to leaf spot caused by *Xanthomonas*. The leaves turn yellow and dry up after infection, but will not wilt.

Bacterial Disease Management

Protect healthy plants from plant-to-plant spread with an application of Phyton-27®. When applied at higher dosage rates, Phyton-27® give the added benefit of the "marker effect" on hidden *Xanthomonas* infections. Phyton-27® induces a bright, fluorescent yellowing of foliage.

Rust

Rust can be difficult to detect on incoming cuttings. Look for small yellow spots on the upper and lower surfaces of the leaf. As the disease progresses, brownish spore masses appear in the center of the spots, mostly on the lower leaf surfaces. The spots continue to expand in concentric rings, which look like a bull's eye.

Phyton-27® "Sporicide"

Phyton-27® is toxic to geranium rust spores. An application on incoming cuttings will kill any hidden rust spores, effectively "rust-proofing" your cuttings.

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BACTERICIDE & FUNGICIDE

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It Works!

Phyton-27® delivers exceptional bacterial and fungal disease control on a wide range of ornamental crops. Preventively and therapeutically, from propagation to post-harvest, it just works!

Savvy growers rely on Phyton-27®!



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2007 WINTER SHOW SCHEDULE

MANTS Baltimore, MD	Jan. 10-12 Booth #737
MidAm Chicago, IL	Jan. 17-19 Booth #2438
TPIE Ft. Lauderdale, FL	Jan. 18-20 Booth #2102
NCAN Greensboro, NC	Jan. 18-20
Gulf States Hort Expo Mobile, AL	Feb. 2-3 Booth #1233
New England Grows Boston, MA	Feb. 6-8
SAF Pest Mgt Conf Portland, OR	Feb. 22-24



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