

PhytonNews

Growers rely on Phyton27®

Wild Spring Weather

It has been a wild weather ride this spring with record cold temperatures and record rains. Now the disease problems and typical weather patterns of late spring and early summer, like May Gray and June Gloom, are almost upon us. So, let's take a whirlwind tour around the country to see where Phyton-27® can make in difference in your growing operation.

Surprise Cold Snap: Cold Damage Protection

A plant's ability to withstand freezing temperatures is affected by temperature fluctuations and day lengths prior to a freeze. With a gradual decrease in temperature over a period of time increases, such as we normally get in the fall of the year, plants or plant parts develop the ability to withstand cold temperatures. But when a sudden decrease in temperature in late fall or early spring occurs there is usually more damage than what occurs at the same low temperature in January or February.

The shrubs, trees and perennials in many areas were already out of dormancy when the recent cold front hit. There was a lot of vulnerable tissue. Once the tissue is damaged it is ripe for infection by opportunistic pathogens including Botrytis, Pseudomonas (blight and bacterial leaf spot), and other fungi that regularly cause leaf spots.

Phyton-27® First-Aid for "Frost Bit" Plants

Apply Phyton-27® after a chill or freeze to clean up damaged tissue and protect against further damage by lurking pathogens. With Phyton-27®, you get broad-spectrum anti-bacterial and anti-fungal protection for all your ornamental shrubs, trees and perennials.

Rainy Day Rescue: Texas & The Northeast

Record rains have pounded Texas and the Northeast. This rainy weather encourages infection and spread of many wet weather diseases including Botrytis, fungal leaf spots, bacterial leaf spots and black spot on roses.

Phyton-27® Umbrella for Soggy Plants

Phyton-27® provides systemic protection that is quickly absorbed into the plant so it won't wash away. Within 2 to 4 hours after spraying, Phyton-27® is absorbed through the foliage and systemically moves up, down and throughout the plant.

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WE'VE MOVED OUR OFFICES

In April, Phyton Corporation moved their offices to New Hope, Minnesota. The toll-free number (800-356-8733) and website address (www.phyton-corp.com) will remain the same. The new address, telephone and fax numbers are:

Phyton Corporation
5608 International Parkway
New Hope, MN 55428
Ph: 763-432-4008
Fax: 763-432-4009

XANTHOMONAS, THE HIDDEN ENEMY

Xanthomonas can be present but remain hidden in cooler growing conditions. It likes warmer greenhouse conditions and symptoms and rapid spread may not occur until later in the spring. Proactive prevention is needed to keep ahead of these hidden infections.

Systemic bacterial diseases like Xanthomonas wilt are the most feared in a geranium greenhouses because of the potential for devastating losses. The first lines of defense are avoidance and sanitation, but with a sneaky bacterial disease like Xanthomonas this is often not enough. Proactive prevention with Phyton-27® protects healthy plants from plant-to-plant spread. Suspect crops can be treated with Phyton-27® at the higher curative rate for the added benefit of “marking” infected plants before they exhibit symptoms.

Symptoms - Often the first symptom of Xanthomonas is wilting of one or two plant leaves during the heat of the day. The petiole remains turgid giving the wilted leaf an “umbrella-like” appearance. The plant may recover during the evening, but over a period of days, permanent wilting sets in with yellowing and browning of the leaves. Other symptoms include yellow-to-brown v-shaped leaf lesions, tiny brown water-soaked leaf spots and black stem lesions.

Disease Management - A bacterial management program will help keep losses to a minimum. Discard symptomatic plants from blocks that have tested positive along with plants in a 3-foot radius. Isolate suspect plants to prevent plant-to-plant spread. Treat the remaining crop with Phyton-27® and monitor the crop for the “yellowing” marker effect. Repeat applications may be needed. To reduce spread, keep overhead watering to a minimum, avoid hanging geranium baskets over other geranium crops, restrict greenhouse access to well-trained employees, and insist that all workers practice strict sanitation when handling the crop.

For detailed directions on Phyton-27® use on geranium, call 800-356-8733 and ask for the Geranium Technical Bulletin, or visit our website at www.phytoncorp.com to download a copy for your files.

May Gray & June Gloom: California

The months of May and June can turn “Sunny Southern California” to gray and gloomy. May Gray and June Gloom refer to the common late-spring, early-summer weather pattern of overcast skies, mild temperatures, and early morning fog and drizzle. If some Californians claim affliction with Seasonal Affective Disorder, think what this wet, damp weather will do to your crops.

May Gray and June Gloom provide the perfect conditions of cool temperatures and high humidity and the perfect plant stages of succulent tissue and fading flowers that powdery mildew and Botrytis love.

Powdery Mildew

This fungus (actually powdery mildew is caused by a number of different species of fungi) is quite different from most of the foliar fungal pathogens in that it does not need water on the leaves for infection. It merely needs high humidity and prefers moderate temperatures and low light intensities (cloudy, gloomy weather). The powdery mildew spores are spread by splashing water, so once you have an infection, rain or splashing irrigation water can spread it around. Most of the powdery mildews prefer to infect young succulent spring growth.

Powdery mildew is easily recognized by the white to gray powdery growth, usually on the leaves, but sometimes on the stems and flowers. There are a few rare cases, such as kalanchoe, where powdery mildew damages the plant but may not develop the characteristic powdery spores.

Phyton-27® is an excellent tool to preventive and eradicate powdery mildew. Maintain a regular preventive spray program using lower rates and carefully scout your crop for early detection and treatment of any powdery mildew outbreaks.

Treat an active powdery mildew infection by removing infected leaves before treatment to reduce inoculum potential. Apply Phyton-27® at labeled rates as a wet spray. Low volume applications are effective in preventive situations but not against active infections. Established infections may require multiple applications, higher dosage rates and shorter treatment intervals. When you encounter a particularly tough strain of powdery mildew, rotate or tank mix Phyton-27® with one of the strobilurin products.

Botrytis

Cool, damp, cloudy weather is ideal for Botrytis infection. The fungus loves the cooler temperatures (60 to 70 degrees F) found in many winter greenhouses. Botrytis is also a notorious postharvest problem, capable of establishing at temperatures of 32 to 50 degrees F. Bud or blossom blight can be a serious problem during storage and shipping of potted plants and cut flowers.

Botrytis causes a variety of symptoms including damping off or seedling blight, flower blights and bud rots, leaf spots or blights, cutting rots, and stem cankers. Infection first appears as water-soaking or browning. Under humid conditions, a tan to gray fuzzy mold develops on rotted tissue.

Keep your crops clean with regular applications of Phyton-27® at 7 to 14 day intervals, especially when conditions are ripe for Botrytis, and plants are stressed, wounded or senescing. Intervals can be shortened to 3 to 5 days for a couple of applications to control active infections.

Cultural Control:

- **Early Detection** - Regular scouting to catch Botrytis in the early stages allows for flexibility with spot treating and using lower, safer and more economical dosage rates. Lower rates are safe to use on buds and open blooms on most crops with no damage or residue.
- **Environmental Controls** - Maintain good air circulation with fans, heating and venting. Space plants to allow better air circulation around and through the foliage and use fans for air movement above the canopy.
- **Strict Sanitation** - Remove senescing flowers and foliage, as well as infected plant tissue, to reduce inoculum.

Pseudomonas Leaf Spot & Blight

Pseudomonas 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.

- **Garden Impatiens** - small spots with purple margins
- **New Guinea Impatiens** - large watersoaked lesions that turn dark brown
- **Florist Geranium** - brown to black spots surrounded by yellowed leaf tissue, affected leaves die but remain attached to the plant without wilting

Phyton-27® can be applied 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 you are treating.

Black Spot

Black spot is favored by periods of warm, wet weather. Look for brown-to-black, circular spots with “feathery” edges on the young, expanding leaves and canes. Infected leaves eventually turn yellow and drop prematurely.

The black spot pathogen penetrates deep into infected rose tissue, so a systemic product like Phyton-27® is needed for reliable control. Regular applications of Phyton-27® at 7 to 10 day intervals are needed to protect the vulnerable emerging foliage. Intervals can be spread out to 10 to 14 days during prolonged dry periods. For curative applications, apply every 5 to 7 days.

Bonus Benefits

When you use Phyton-27® you get Bonus Benefits beyond the systemic, broad-spectrum disease control.

- safe on most blooms
- no residue
- excellent tool for resistance management

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.



May 2007 Floriculture

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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BACTERICIDE & FUNGICIDE

2007 SUMMER SHOW SCHEDULE

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|---------------------------------------|----------------------------|
| SE Greenhouse Conf. Greenville, SC | June 22-23 Booth #6002 |
| OFA Columbus, OH | July 15-17 Booth #2621 |
| FarWest Portland, OR | Aug. 23-25 Booth #8022 |
| Bedding Plant Conf. Cleveland, OH | Sept. 9-12 |
| CanWest Vancouver, BC | Sept. 12-13 Booth #1300 |



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CORPORATION

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5608 International Parkway, New Hope MN 55428
www.phytoncorp.com

800-356-8733
763-432-4008
Fax 763-432-4009
info@phytoncorp.com