Cut Flower Technical Bulletin

Phyton® 27

BACTERICIDE & FUNGICIDE

Savvy Growers *Rely on Phyton-27®*

Botrytis

Spores of Botrytis are everywhere and germinate wherever free moisture is present. The fungus grows rapidly in the humid environment of the flower head, even at low temperatures.

Pre-harvest Spray - Phyton-27® as a foliar spray keeps plants clean going into the cutting season. Spray plants in the growing area to prevent or cleanup Botrytis, particularly during the heavy cutting season. Plants with cutting wounds need the extra protection of Phyton-27® as wounds are a perfect entry-point for Botrytis infection.

Post-harvest Dip - A post-harvest dip will keep last minute surprises from popping up which you don't want to ship to your customer. Dip flowers or buds in a solution of Phyton-27® for a few seconds after cutting for post-harvest Botrytis control.

Downy Mildew

Downy mildew infection is favored by cool temperatures, high humidity and leaf wetness. Heavy precipitation, fog and dew tend to increase incidence making fall, winter and early spring prime times for disease development. The downy growth of the fungus is found on the under surfaces of the leaves, along with corresponding discolored areas on the upper surface of foliage.

Control - Apply Phyton-27® as a foliar spray to prevent downy mildew. For curative applications, rogue diseased plants and treat the remaining plants with a foliar spray of Phyton-27®.

Powdery Mildew

Powdery mildew is a threat during periods of warm days and cool nights. While not generally fatal, powdery mildew can reduce yield and quality of cut flowers.

The number and variety of annual and perennial flowering crops grown as alternative cut flowers is growing as rapidly as their counterparts grown for landscape use. Phyton-27® offers broad labeling of annual and perennial plants for control of powdery mildew.

Control - Apply Phyton-27® as a foliar spray to prevent and control powdery mildew. Removing mildew infected tissue may help to reduce inoculum and re-infection.

Rust

Along with Botrytis and powdery mildew, rust is widespread, persistant and highly opportunistic. Leaves, stems and flowers of snapdragons can become infected by the *Puccinia antirrhini* fungus which appears as pustules of reddish-brown spores.

Control - Apply 1.3 to 2.5 fluid ounces per 10 gallons water as a foliar spray. Phyton-27® provided very good control of rust on snapdragon in trials run at Chase Research Gardens in California.

Phytophthora Root Rot

The Phytophthora fungus can cause root and crown rot. Infected roots are typically darkly colored and water-soaked in appearance. Aboveground symptoms include sudden flagging or wilting of the plant. Anything that stresses or slows root growth, such as poor aeration or drainage in the growing media or high soluble salts and root wounding, can lead to a root rot infection.

Control - Apply Phyton-27® as a drench to prevent Phytophthora root rot. For curative applications, rogue wilted or visibly diseased plants and treat the remaining crop with a drench of Phyton-27®.

Bacterial Diseases - Erwinia, Xanthomonas, Pseudomonas & Agrobacterium Crown Gall

Moisture and warmth are conducive to the development and spread of bacterial diseases. Bacterial pathogens of cut flower crops can cause leaf spots, soft rots and vascular wilts. *Erwinia* thrives in the warmest and most humid cut flower growing environments (indoors and out). *Pseudomonas* likes cooler temperatures.

Leaf Spots - The above mentioned bacteria can cause leaf spots on a variety of crops. The best defense is keeping the leaves as dry as possible to avoid infection and spread by splashing water along with preventive applications of Phyton-27® which gives you protection agains bacterial and fungal leaf spots.

Soft Rots - Two subspecies of Erwinia are the primary culprits for soft rots. The bacteria produce an enzyme that "digests" the plant structure resulting in soft, mushy plant tissue. Cuttings are particular-

ly vulnerable to soft rot because of the presence of a wound combined with free moisture from misting.

Vascular Wilts - Certain bacteria, *Xanthomonas, Erwinia* and *Raulstonia* (previously known as Pseudomonas), can invade the xylem and cause lethal, systemic wilts.

Galls - *Agrobacterium* causes galls on crowns and roots. The bacterium survives in the soil and infects through fresh wounds.

Control - Apply Phyton-27® as a foliar spray to prevent bacterial infections. For curative applications, rogue diseased plants and treat the remaining plants with a foliar spray of Phyton-27®.

Post-Harvest Quality Assurance

Phyton-27® assures a top quality cut flower crop. It is invisible and gentle. Pre- and Post-harvest treatments with Phyton-27® for Botrytis control, maintain the quality of cut flowers during storage, shipping and in the customer's vase.

Increased Vase Life

Increased fresh weight gain and longer time to peak fresh weight associated with post-harvest dipping of cut flowers in Phyton-27® translate into longer vase-life for treated flowers.

Application Guidelines

The preferred pH range for the dip solution is 5.5 to 6.5. Adjust the pH to this range to avoid darkening of the petal edges on dark colored flowers.

Thoroughly but carefully stir the dip solution. Roses dipped in a sudsy or frothy solution may have a glossy appearance.

Dip flowers/buds for a few seconds soon after cutting for postharvest Botrytis control.

Use dip solution within 48 hours of mixing.

For spray applications, see directions under Flowering Potted Crops.

For additional information, please contact Phyton Corporation's Technical Service at 1-800-356-8733 or info@phytoncorp.com

Read and follow all label directions.

For technical information, contact the manufacturer:
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Many but not all US EPA labeled uses for Phyton-27®
are registered with the California EPA.
California residents should consult the current California
Phyton-27® label for registered uses.

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