



ROSES APPLICATION GUIDELINES

October 2002

Powdery Mildew

Powdery mildew is probably the most widely distributed and serious disease of glasshouse, field-grown, and garden roses. Severe powdery mildew damage reduces leaf growth, the aesthetic value of plants, photosynthetic efficiency and thereby plant growth, and salability of cut flowers.

The white growth of the fungus appears as discrete patches on the leaf surfaces of young leaves, which become twisted and distorted and commonly are completely covered with the powdery white growth. Older leaves may not be distorted but circular or irregular areas may be covered with fungal growth. Mature leaves are usually not affected. Affected leaves may abscise prematurely when environmental conditions are favorable.

To prevent powdery mildew, apply 1.5 to 2.0 fluid ounces of Phyton-27® per 10 gallons water every 10 to 14 days. Maintain a scheduled program to prevent disease.

When disease is present and visible, remove and destroy visibly infected leaves and apply 2.0 to 3.5 fluid ounces of Phyton-27® per 10 gallons water every 7 to 14 days. Rates above 3 ounces per 10 gallons water may cause damage when sprayed on open blooms. Hydraulic wet sprays are more effective than low volume applications when disease symptoms are expressed. Thorough coverage of all plant surfaces is necessary for best disease control.

For heavy disease pressure, apply 3.5 to 5.0 fluid ounces per 10 gallons water every 5 to 7 days. Rates above 3 fluid ounces per 10 gallons water may cause damage when sprayed on open blooms. Hydraulic wet sprays are more effective than low volume applications when disease symptoms are expressed. Thorough coverage of all plant surfaces is necessary for best disease control.

Botrytis

Botrytis blight occurs wherever outdoor and glasshouse roses are grown. During periods of continued wet weather and cool temperatures, buds of infected garden roses fail to open and become covered with the grayish brown mycelial growth. Infected buds may droop, and smooth, slightly sunken lesions may be found extending

down the stem from the base of the bud. Damage on glasshouse roses may be similar to that on outdoor roses or may appear as bruises. Small flecks appear on infected petals and petal tips, or sides become brown and soft.

Phyton-27® is effective for prevention and eradication of *Botrytis* when used as a foliar spray or a cut flower dip.

To prevent *Botrytis*, apply 1.5 fluid ounces Phyton-27® per 10 gallons water at 10 day intervals when conditions are conducive for *Botrytis* infection.

When *Botrytis* is present, apply 2.0 to 5.0 fluid ounces Phyton-27® per 10 gallons water as a wet foliar spray every 5 to 7 days.

Dip cut roses for postharvest *Botrytis* control.

Mix 3 to 3 3/4 teaspoons Phyton-27® per 5 gallons water. Adjust pH of dip solution to 5.5 to 6.5, using any standard acidification method. Thoroughly, but carefully stir the dip solution. Buds dipped in frothy or sudsy solution may have a glossy appearance. Dip flowers/buds for a few seconds soon after cutting.

Always wear protective gloves and appropriate eyewear when dipping flowers. Use dilute solution within 48 hours of mixing. Leftover dip can be used as a soil drench in accordance with labeled drench applications.

Black Spot

Black spot is a major problem on outdoor grown roses, generally present and frequently epidemic. It is a minor problem on glasshouse roses because greater care is taken to avoid free water on foliage and to regulate humidity.

Characteristic black spots develop on upper leaf surfaces. Leaf tissue surrounding the spots turns yellow; chlorosis extends throughout the leaflet until abscission occurs. As disease progresses, spots develop on the lower leaf surfaces as well. Regardless of relative humidity, free water must be present for at least 7 hours for infection to occur.

Effective control of black spot relies on proper management, including 1) pruning and removal of debris since the fungus readily survives in fallen leaves, buds, or infected canes, 2) careful water management to minimize

leaf wetness and humidity, and 3) periodic applications of Phyton-27[®] to prevent and eradicate black spot infections.

To prevent black spot, apply 1.5 to 2.0 fluid ounces Phyton-27[®] per 10 gallons water every 14 to 21 days. Start a preventative program early in the growing season when buds first open. Maintain regular applications with thorough coverage to prevent black spot from occurring.

When black spot is present and visible, apply 2.0 to 3.5 fluid ounces Phyton-27[®] per 10 gallons water every 7 to 14 days. Rates above 3.0 fluid ounces per 10 gallons water may cause damage when sprayed on open blooms.

For heavy disease pressure, apply 3.5 to 5.0 fluid ounces Phyton-27[®] per 10 gallons water every 5 to 7 days. Rates above 3.0 fluid ounces per 10 gallons water may cause damage when sprayed on open blooms. When black spot is severe, combine a foliar spray and soil drench to clean up the foliage, the ground around the plants and the root zone.

Soil drench applications of 2.0 to 3.5 fluid ounces Phyton-27[®] per 10 gallons water may be used effectively if only black spot is present. If powdery mildew is also present use a wet foliar spray.

Downy Mildew

Downy mildew normally occurs during the winter months under cool, humid conditions. The fungus thrives under regular overhead watering and thick growth from close spacing. This highly destructive disease on roses causes severe and rapid defoliation.

Phyton-27[®] is most effect when used preventively. Apply 1.5 to 2.0 fluid ounces per 10 gallons water at 7 to 14 day intervals. If downy mildew is present, increase the rate to 2.5 to 5.0 fluid ounces per 10 gallons water and shorten intervals to every 3 to 7 days.



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Cylindrocladium on Mini-Roses

Plants infected by *Cylindrocladium* start to lose leaves and dark cankers form on the stems. The cankers can girdle the stem and kill the plant. When the cankers do not kill the plant, fewer and inferior flowers tend to be produced from these canes. Some varieties or series, such as the Parade series, are sensitive to high rates of Phyton-27[®]. Before applying Phyton-27[®] to a new variety, test on a few plants for safety.

Soil drench. Apply 2.0 to 3.5 fluid ounces Phyton-27[®] per 10 gallons water every 10 to 14 days when disease appears.

Spray application. Apply 1.5 to 5.0 fluid ounces Phyton-27[®] per 10 gallons water every 7 to 10 days. During propagation, spray stock plants a 1 to 2 days before taking cuttings. Spray cuttings 2 to 3 days after sticking in the rooting media.

General Use Guidelines

pH level. The preferred pH level for the spray solution is 5.5 to 6.5. Use any standard acidification method to adjust to this range. Phyton-27[®] concentrate has a pH of 4.7 and will contribute to lowering the pH of the water.

Safety on Open Blooms. Phyton-27[®] has been tested on a variety of tender open blooms under varying conditions without phytotoxicity at spray rates of 1.3 to 1.5 fluid ounces per 10 gallons water. However, environmental factors, differences between varieties and cultivars, and maturity of blooms could affect sensitivity. Test a few plants, including some with mature or senescing flowers, before treating the entire crop.

Tank Mixes. Phyton-27[®] is reported compatible with many registered pesticides. Before using additives and/or combinations for general applications, test for physical compatibility and noninjury under your conditions of use. Avoid mixing with metals or other salts. Spreaders are compatible, but avoid stickers and horticultural oils. Use ionically active spreaders only at low rates. Do not tank mix Phyton-27[®] with B-NINE or strongly acidic compounds, such as Aliette, and do not apply Phyton-27[®] within 7 days either before or after applications of B-NINE and 14 days before or after Aliette.

Hot, dry and intense sun alert. Rapid evaporation may reduce the maximum efficacy of this systemic product and could lead to leaf burn. Avoid spraying during hot and dry conditions.

Metals alert. Phyton-27[®] can interact with some metals such as galvanized metal, and cause phytotoxicity or possible defoliation.