

# GERANIUM DISEASES



## . BACTERIAL LEAF SPOTS

*Xanthomonas* and *Pseudomonas* are bacteria that commonly cause leaf spots on geranium. Sanitation and scouting are necessary cultural practices to control bacterial diseases. It's also recommended to minimize splashing and reduce leaf wetness. These bacteria will spread by infected cuttings and seeds, water splashing and cutting instruments.

### SYMPTOMS



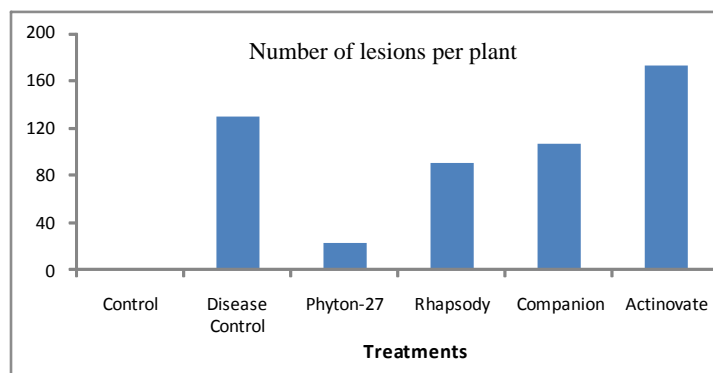
### SPOTS CHARACTERISTICS

- Tan to dark brown
- Well defined edges
- Water soaked appearance
- Yellow or chlorotic halo
- Located within leaf veins



### PHYTON 27

- Use Phyton 27 to control bacterial and fungal diseases in all phases of your operation.
- Apply to stock plants before taking cuttings to prevent disease spread, and as a preventative or curative fungicide during mist propagation.
- Apply at transplant time to full bloom. Phyton 27 is safe and effective on a very wide range of diseases at all stages of geranium growth.
- Phyton 27 is safe and effective on open blooms and never leaves a residue.



Average number of *Xanthomonas* lesions per geranium plant. David Norman, University of Florida, 2007.

	When symptoms are visible	<ul style="list-style-type: none"> <li>• 5 oz/10 gal</li> <li>• 3.5 oz/10 gal for Ivy geraniums</li> </ul>	Apply Phyton-27 every 3 to 5 days
	Preventative	<ul style="list-style-type: none"> <li>• 1.5 to 4.5 oz/10 gal</li> </ul>	Apply Phyton-27 every 10 to 14 days
	Use X-3 to disinfect all greenhouse benches, sterilize planting containers, cutting knives and other greenhouse equipment such as foot mats.		

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## . Botrytis blight

Botrytis represents a threat and a challenge in each geranium production phase. It typically thrives in wet, humid conditions.

## . Rust

The first symptoms will appear on the leaf underside as small, yellow spots which will develop brown pustules in the center. A ring of secondary pustules will form after, giving the appearance of two concentric rings. Eventually, pustules will appear in the upper surface, leaves may become yellow and drop in severely infected plants.

The spores are spread by splashing water, air and workers handling infected plants.

**To Prevent Botrytis and Rust :** apply Phyton-27 every 10 to 14 days during any stage of the production cycle, even when blooms are open.

**When Botrytis or Rust are present:** increase the rate and apply every 5 to 7 days



Disease	Rate (oz/10 gal)	Method of application
Botrytis	1.5 - 2.0	Foliar spray
Rust	1.5 - 4.0	Foliar spray

## Propagation and Disease Control



Sanitation is key during propagation of geraniums. It is crucial to ensure that stock plants are free of major bacterial, fungal and viral diseases to guarantee a healthy crop.

### Stock plants

Spray stock plants with Phyton-27 a few days before taking cuttings.

### Cuttings

Treat cuttings by dipping for a few seconds before sticking or spray the stuck cutting a few days after transplant.