

# BOTRYTIS

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*Rotation Program*

syngenta®

Botrytis blight, or gray mold, is the most common disease that affects ornamental plants. It is caused by the fungus *Botrytis cinerea*, an opportunistic pathogen that can invade and colonize both living and dead plant tissue. It is particularly threatening to newly propagated material like germinated/young seedlings and unrooted cuttings. Plants that have been or will be boxed, stored or transported are also highly susceptible because humidity and ethylene levels contribute to plant stress and susceptibility. Thriving in cool, humid environments, Botrytis can be particularly problematic in the spring and late fall into winter.



Initial Botrytis infections result in water-soaked spots on foliage and flowers. Once established, gray mold can quickly spread throughout the crop and production area. It is important to continually check plants as this disease can appear virtually overnight under the right conditions.

### *Symptoms*

- Small, light brown spots or tiny flecks on flowers
- V-shaped, tan-brown lesions on foliage
- Sunken, discolored cankers on stems
- Flower buds that are brown and appear to be water-soaked
- Fuzzy brown or gray spores
- Plant wilting

### *Cultural Tips*

- Provide a clean, dry growing environment
- Scout frequently
- Irrigate early in the day to reduce how long leaves are wet
- Provide good plant spacing and horizontal air flow
- Clean and sanitize between crops
- Keep humidity low by heating or venting
- Immediately remove wounded and diseased plants as well as dead flowers and leaves to limit spore production and spread

### *Environmental Conditions*

Botrytis is more likely to develop when:

- There is an extended period of cloudy, damp weather
- Temperatures are between 62 – 75°F
- Humidity levels are greater than 85 percent
- Leaves are wet for four or more hours
- Plants are grown in crowded spaces or shady locations with poor air circulation

### *Susceptible Crops*

All ornamentals are at risk for Botrytis blight, but some crops in particular should be scouted weekly for signs of fungi, including:

- Geraniums
- Poinsettias
- Field-grown roses
- Petunias
- Cyclamen
- Pansies
- Impatiens
- Chrysanthemums



## Greenhouse & Nursery Rotation

Propagation and post-harvest environments, such as coolers and shipping boxes, often create a moist, humid environment that fosters Botrytis so preventive action is necessary. Applying a rotation of effective fungicides during production and prior to storage and shipping will protect the crop from Botrytis and ensure its quality for sale after it leaves production. Recommended applications are preventive (prior to disease). For active infections, shorten the application interval to 7 days and use higher labeled rates.

Production Stage	FRAC #	Fungicide	Recommended Treatment	Application Rates	Application Notes	Target Diseases
Propagation Options (2 - 3 weeks)	M5 <i>or</i> M5, 2	Daconil Ultrex® <i>or</i> Daconil Weatherstik® fungicides <i>or</i> Daconil Ultrex + Chipco® 26019 fungicides	Spray	Daconil Ultrex: 22.4 oz./100 gal. Daconil Weatherstik: 22 fl. oz./100 gal. <i>or</i> Daconil Ultrex: 22.4 oz./100 gal. + Chipco 26019: 16 oz./100 gal.	Preventive foliar application on a 7-10-day interval. <b><i>Apply prior to flowering, before blooms.</i></b>	Botrytis, Leaf spots, Powdery mildew, Rusts
	11 + 7	Mural® fungicide	Spray	4 - 7 oz./100 gal.	Preventive foliar application on a 7-10-day interval.	Botrytis, Leaf spots, Powdery mildew, Rusts
Production Rotation	M5	Daconil Ultrex <i>or</i> Daconil Weatherstik	Spray	Daconil Ultrex: 22.4 oz./100 gal. Daconil Weatherstik: 22 fl. oz./100 gal.	Preventive foliar application on a 14-21-day interval. <b><i>Apply prior to flowering, before blooms.</i></b>	Botrytis, Leaf spots, Powdery mildew, Rusts
	11 + 7	Mural	Spray	4 - 7 oz./100 gal.	Preventive foliar application on a 14-21-day interval.	Botrytis, Leaf spots, Powdery mildew, Rusts
	9 + 12	Palladium® fungicide*	Spray	4 - 6 fl. oz./100 gal.*	Preventive foliar application on a 14-21-day interval.	Botrytis, Leaf spots, Powdery mildew
	11 + 7	Mural	Spray	4 - 7 oz./100 gal.	Preventive foliar application on a 14-21-day interval.	Botrytis, Leaf spots, Powdery mildew, Rusts
Finishing/ Shipment	9 + 12 <i>or</i> 11 + 7 <i>or</i> 17	Palladium* <i>or</i> Mural <i>or</i> Decree® fungicide	Spray	Palladium: 4 - 6 oz./100 gal.* <i>or</i> Mural: 5 - 7 oz./100 gal. <i>or</i> Decree: 24 oz./100 gal.	Preventive foliar application approximately 2-4 days prior to shipment.	Botrytis, Fusarium, Leaf spots, Rhizoctonia

\*Foliar applications or excessive runoff of Palladium sprays may cause stunting or chlorosis to some geranium varieties.  
Applications of Palladium to impatiens or New Guinea impatiens seedlings may cause stunting or chlorosis.

## *Your Comprehensive Botrytis Solution*

Botrytis has high-risk for developing fungicide resistance so it is important to follow a rotation program that includes different modes of action. These recommended rotations and cultural practices can help lessen the risk of Botrytis developing in greenhouse and nursery crops.

To learn more, visit [\*www.GreenCastOnline.com/Solutions\*](http://www.GreenCastOnline.com/Solutions)



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