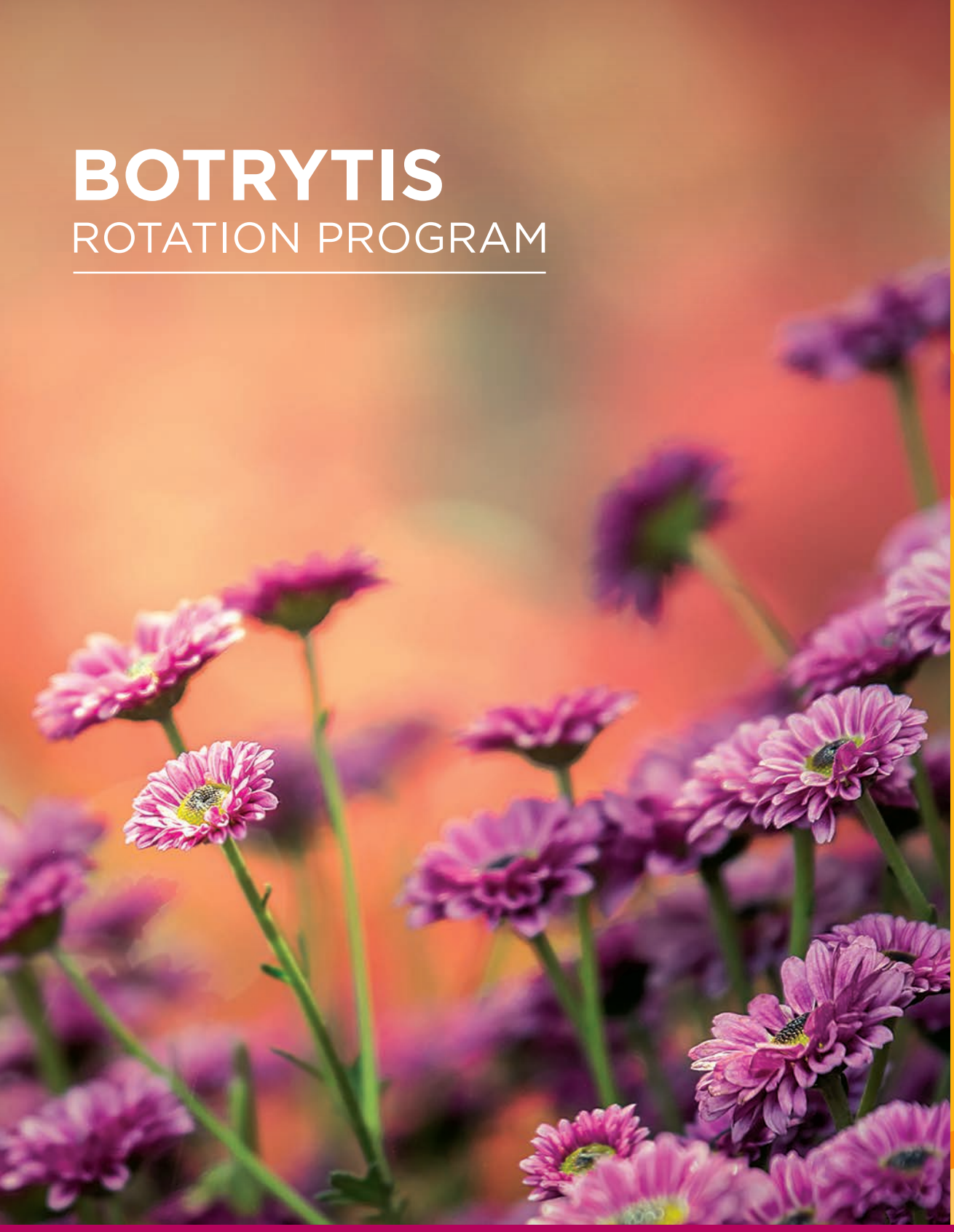
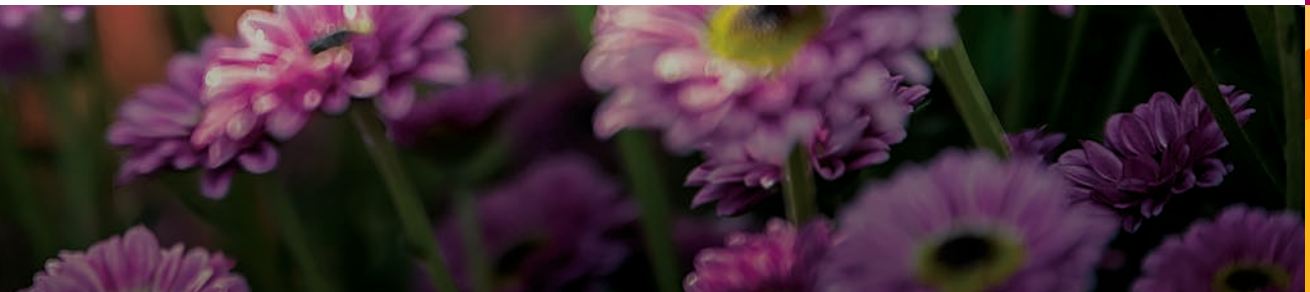
BOTRYTIS
ROTATION PROGRAM



Ornamentals

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 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.

YOUR COMPLETE 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 greenhouses and nurseries.

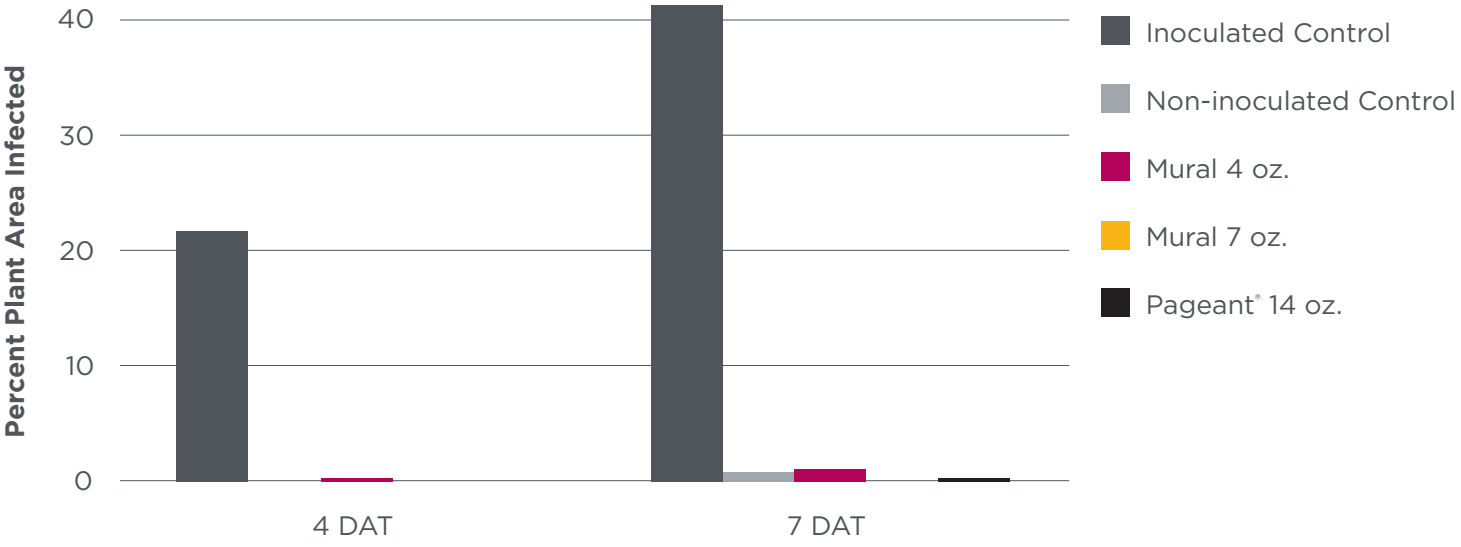
Greenhouse & Nursery Rotation

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 seven days and use higher labeled rates.

Production Stage	FRAC #	Fungicide	Treatment	Application Rates (per 100 gal.)	Application Notes	Target Diseases
Propagation Options (2 - 3 weeks)	M5 **or** M5, 2	Daconil Ultrex® **or** Daconil Weatherstik® fungicides **or** Daconil Ultrex + Chipco® 26019 fungicides	Spray	Daconil Ultrex: 22.4 oz. **or** Daconil Weatherstik: 22 fl. oz. **or** Daconil Ultrex: 22.4 oz. + Chipco 26019: 16 oz.	Preventive foliar application on a 7-10-day interval. ***Apply prior to flowering, before blooms.***	Botrytis, Leaf spots, Powdery mildew, Rusts
	7 + 11	Mural® fungicide	Spray	4 - 7 oz.	Preventive foliar application on a 7-10-day interval.	Botrytis, Leaf spots, Powdery mildew, Rusts
Production Rotation	M5	Daconil Ultrex **or** Daconil Weatherstik	Spray	Daconil Ultrex: 22.4 oz. **or** Daconil Weatherstik: 22 fl. oz.	Preventive foliar application on a 14-21-day interval. ***Apply prior to flowering, before blooms.***	Botrytis, Leaf spots, Powdery mildew, Rusts
	7 + 11	Mural	Spray	4 - 7 oz.	Preventive foliar application on a 14-21-day interval.	Botrytis, Leaf spots, Powdery mildew, Rusts
	9 + 12	*Palladium® fungicide	Spray	4 - 6 oz.	Preventive foliar application on a 14-21-day interval.	Botrytis, Leaf spots, Powdery mildew
	3 + 7	Postiva™ fungicide	Spray	12 - 20 fl. oz.		Botrytis, Leaf spots, Powdery mildew, Rusts
Finishing/ Shipment	9 + 12 **or** 11 + 7 **or** 17	Postiva, Mural **or** *Palladium	Spray	Postiva: 12 - 20 fl. oz. Mural: 5 - 7 oz. **or** *Palladium: 4 - 6 oz.	Preventive foliar application approximately 2-4 days prior to shipment.	Botrytis, Leaf spots

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

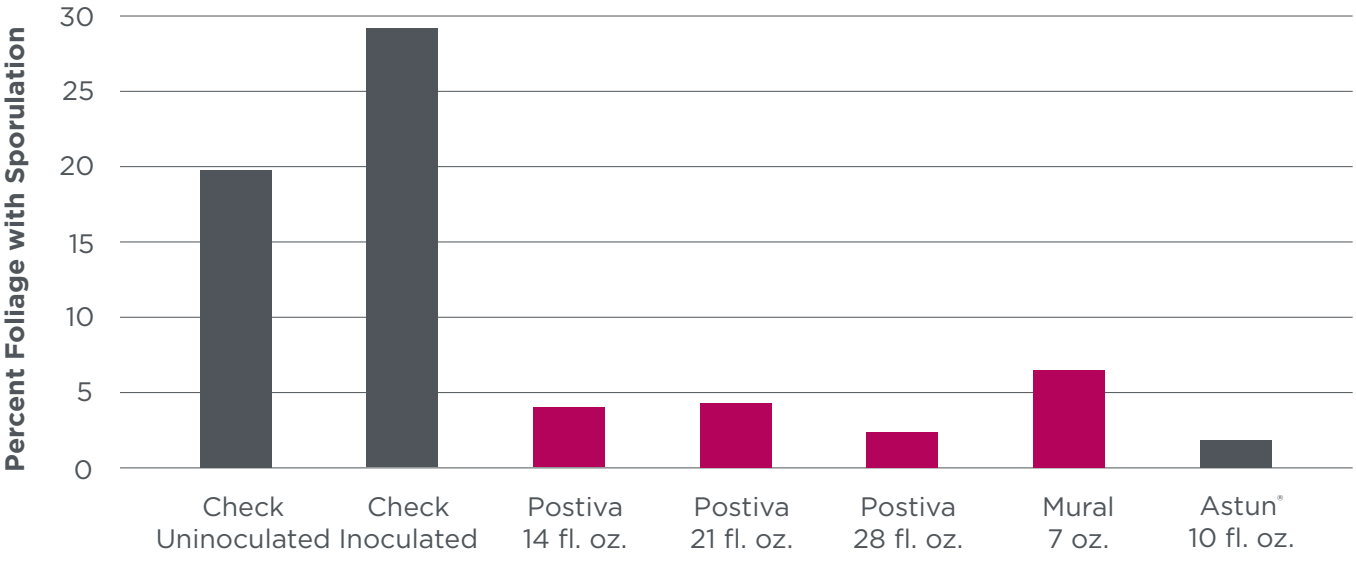
CONTROL OF BOTRYTIS ON GERANIUM



DAT = Days After Treatment
2014 Vero Beach Research Center, Syngenta
Rates per 100 gal

CONTROL OF BOTRYTIS ON GERANIUM

Percent foliage with sporulation 10 days after last treatment



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2014 Vero Beach Research Center, Syngenta
Rates per 100 gal

Disease Symptoms

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
- Brown flower buds that appear water-soaked
- Fuzzy brown or gray spores
- Plant wilting

Botrytis sporulation on Gerbera Daisy. Syngenta.

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
- Remove wounded and diseased plants as well as dead flowers/leaves immediately to limit spore production and spread

Environmental Conditions

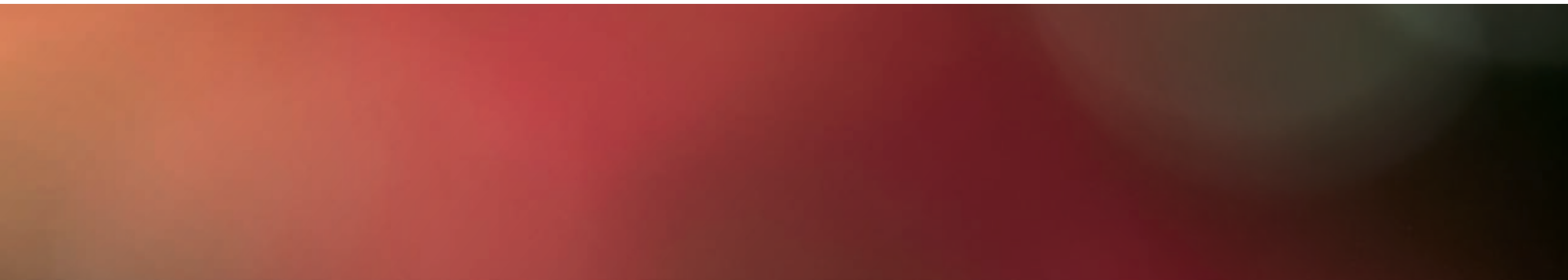
Botrytis is more likely to develop when:

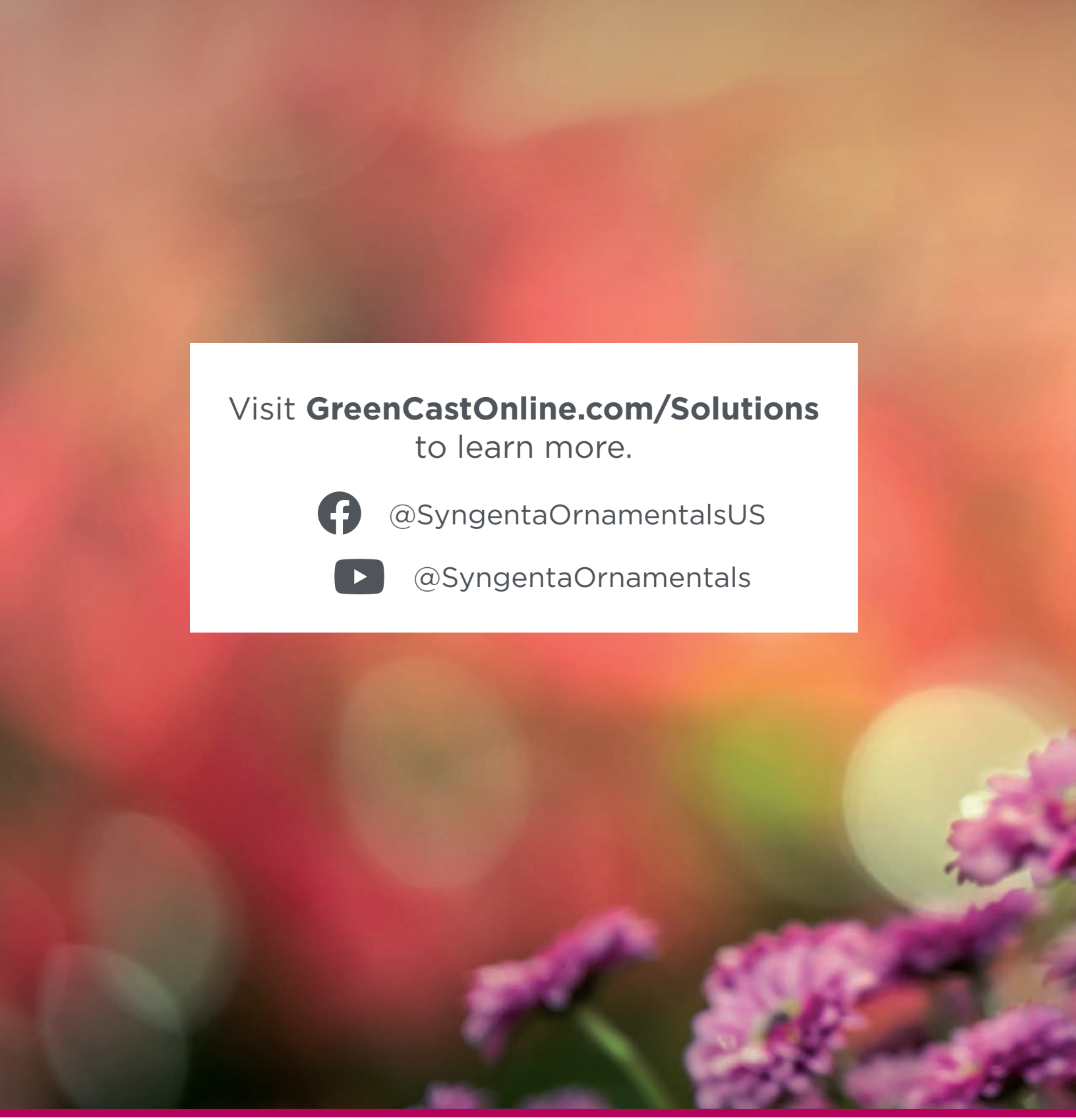
- There is an extended period of cloudy, damp weather
- Temperatures are between 62 – 75°F
- Humidity levels are greater than 85%
- Leaves are wet for four or more hours
- Plants are grown in crowded spaces or shady locations with poor air circulation

Susceptible Crops

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

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





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