

Special Research Report #115: Disease Management

Managing Botrytis Blight on Poinsettia

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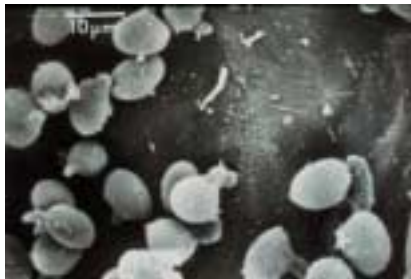
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BACKGROUND

Stem, leaf, and flower blights caused by the fungus *Botrytis cinerea* can limit all phases of production. *Botrytis* is known for its ability to produce large masses of gray conidia (spores) on diseased or dead tissue.



Scanning electron micrograph of *B. cinerea* conidia.

Botrytis blight is a significant disease of poinsettias. It typically becomes established and reproduces on aging lower leaves that are near the moist soil surface and under the plant canopy. *Botrytis* readily infects the broken or cut stem surface of stock plants and progresses downward, causing a dieback of the entire stem. Spores are



Dieback of poinsettia stem with sporulating disease.

readily produced on this diseased tissue.

Managing blight is complicated by the resistance of some *Botrytis* strains to benzimidazole (thiophanate-methyl) and dicarboximide (iprodione) fungicides.

MATERIALS NEEDED

Ten fungicidal products were tested in three replicated greenhouse trials. Treatments were applied every 7 - 14 days. Plants were maintained in an environment favorable for growth and reproduction of *Botrytis*.

RESULTS

Several fungicides showed activity against *Botrytis*. Daconil Weatherstik



Botrytis blight on white and red bracts of poinsettia.

consistently limited *Botrytis* reproduction (see Trials 1 and 3). Compass, Medallion, and the currently unregistered product Cyprodinil/Fludioxonil also effectively managed *Botrytis* (see Trial 2). Decree significantly limited disease on both cultivars in Trial 3, while Chipco 26019 and Endorse (not currently registered) were effective on 'Sonora White.'

CONCLUSIONS

These trials identified products that are effective against Botrytis blight of poinsettia. Chipco 26019, while effective, is a dicarboximide fungicide and should not be used alone. It must be used in a program that alternates among fungicides with a different mode of action. Some greenhouse strains of *B. cinerea* are resistant to dicarboxamide fungicides. Delaying fungicide resistance is important, as benzimidazole fungicides (thiophanate-methyl) may not be highly effective for Botrytis blight control due to widespread

development of resistance in *B. cinerea*.

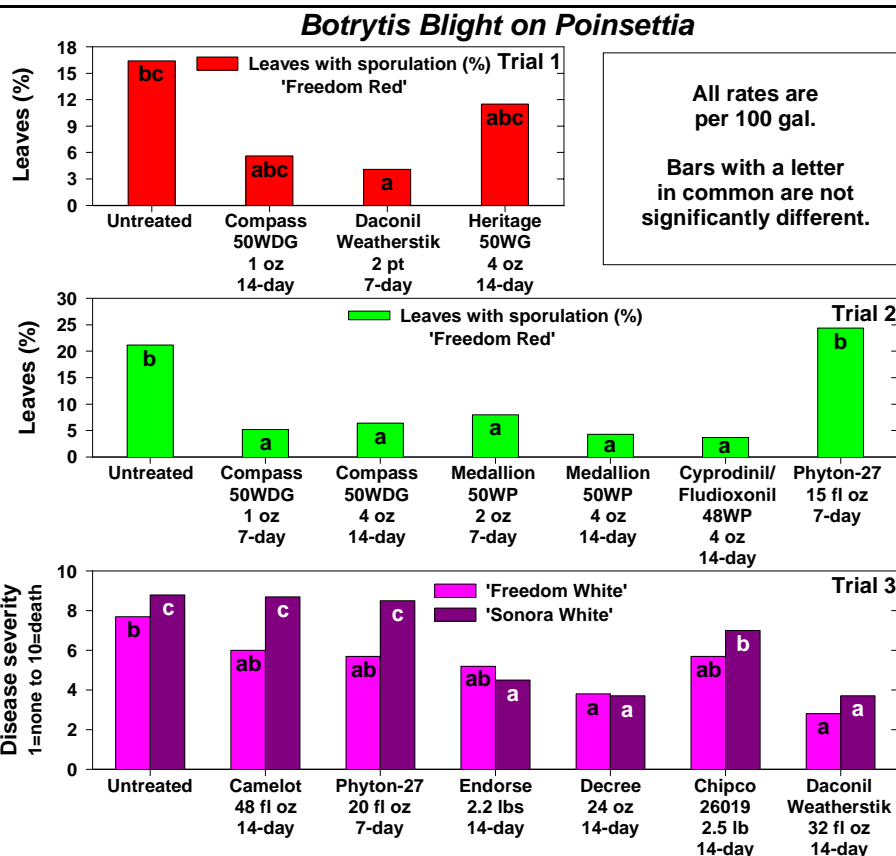
Cyprodinil/Fludioxonil, Compass, Decree, and Medallion proved effective against Botrytis blight and are reduced risk-fungicides. Endorse is a biopesticide and considered to be a “soft” product. Although Cyprodinil/Fludioxonil and Endorse are not currently labeled for use in ornamentals, they show promise and may become additional tools in the future.

IMPACT TO THE INDUSTRY

Limiting the ability of *Botrytis* to reproduce is especially important in halting an epidemic. An important tool for controlling Botrytis blight is the timely application of effective fungicides. Since rotating fungicides with different modes of action is important to prevent development of fungicide resistance in the pathogen, additional fungicides are needed.

Additional recommendations for managing Botrytis blight include the prevention of the occurrence and long duration of free moisture on the plant's surface. Thus,

- Keep relative humidity below 85% and provide good air circulation.
- Increase plant spacing to allow air and fungicides to penetrate the plant canopy.
- Water in the morning so foliage dries by evening.



Fungicides used in trials.

Fungicide	Active ingredient	Registered
Camelot 58EC, Phyton-27 21EC	copper	yes
Chipco 26019 50WP	iprodione	yes
Compass 50WDG	trifloxystrobin	yes
Cyprodinil/Fludioxonil 48WP	cyprodinil + fludioxonil	no
Daconil Weatherstik	chlorothalonil	yes
Decree 50WDG	fenhexamid	yes
Endorse 2.5WP	polyoxin D zinc salt	no
Heritage 50WG	azoxystrobin	yes
Medallion 50WP	fludioxonil	yes

Sanitation is also an important management tool for controlling Botrytis blight.

Thus,

- Collect and dispose of infected plant debris.
- Severely infected plants should be bagged on-site to prevent large amounts of spores being “shaken off” en route to the trash container.

- Keep trash containers covered and empty them frequently.
- Keep trash containers in an area distant from where plants are grown.

Research cooperators were: Margery Daughtrey, Cornell University; and Larry Barnes, Texas A&M University.

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