Special Research Report #118: Disease Management

Managing Powdery Mildew on Poinsettias

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Powdery mildew on poinsettia.

BACKGROUND

Powdery mildew of poinsettia is caused by the fungus *Oidium* sp. It can occur on all above-ground plant parts and results in a white, powdery or fluffy appearance. While a severe infection can cause yellowing and withering of leaves, a light infection can render plants unmarketable. The first colonies of powdery mildew usually occur on the undersides of the lower leaves where they escape detection until the environment is favorable for rapid production of conidia (spores). Once conidia are produced in large quantities, the disease spreads rapidly and becomes evident to growers. When powdery mildew "explodes," it is difficult to control even with a highly effective fungicide. Also, the white fungal colonies present before the fungicide treatment remain on the plant surface and are unsightly. Since fungicide applications to colored bracts can result in phytotoxicity or residue, it can be helpful to use a long-lasting fungicide just prior to bract coloration.

MATERIALS NEEDED

Registered fungicides and new products were evaluated for their ability to control powdery mildew on poinsettia 'Freedom Red' in replicated greenhouse trials. Heavily infected plants were placed within the treatments to serve as a source of inoculum.

RESULTS

Several fungicides provided outstanding control. They included: Systhane, Terraguard, and the strobilurins. In addition, it was noted that applying Heritage every seven days appeared to be better than longer application intervals.

While other products (3336 F and Serenade) significantly limited powdery mildew when compared to the untreated plants, the white colonies remained visible and plant quality was compromised. When Triact 70 or Phyton-27 were used in alternation with Strike, disease was limited.

Some products remained effective even 61 days after the last treatment. They included 3336 F, Compass, Cygnus, Quinoxyfen, and Systhane. Quinoxyfen and Systhane were highly effective.

CONCLUSIONS

Powdery mildew on poinsettia was managed by the timely applications of effective

Fungicides used in trials.

Fungicide	Active ingredient	Registered
AQ-10 Biofungicide	*Ampelomyces quisqualis*	yes
3336 F	thiophanate-methyl	yes
Compass 50WDG	trifloxystrobin (strobilurin)	yes
Cygnus 50WG	kresoxim-methyl (strobilurin)	yes
Decree 50WDG	fenhexamid	no
Heritage 50WG	azoxystrobin (strobilurin)	yes
Insigna (BAS 500) F	pyraclostrobin (strobilurin)	no
Phyton-27 21EC	copper	yes
Pipron 84EC	piperalin	yes
Quinoxyfen	quinoxyfen	no
Serenade	*Bacillus subtilis*	no
Strike 25WDG	triadimefon	yes
Systhane 40WSP	myclobutanil	yes
Terraguard 50W	triflumizole	yes
Triact 70 EC	neem oil extract	yes

Untreated (left) vs AQ-10 Biofungicide (right).

Untreated vs Compass.

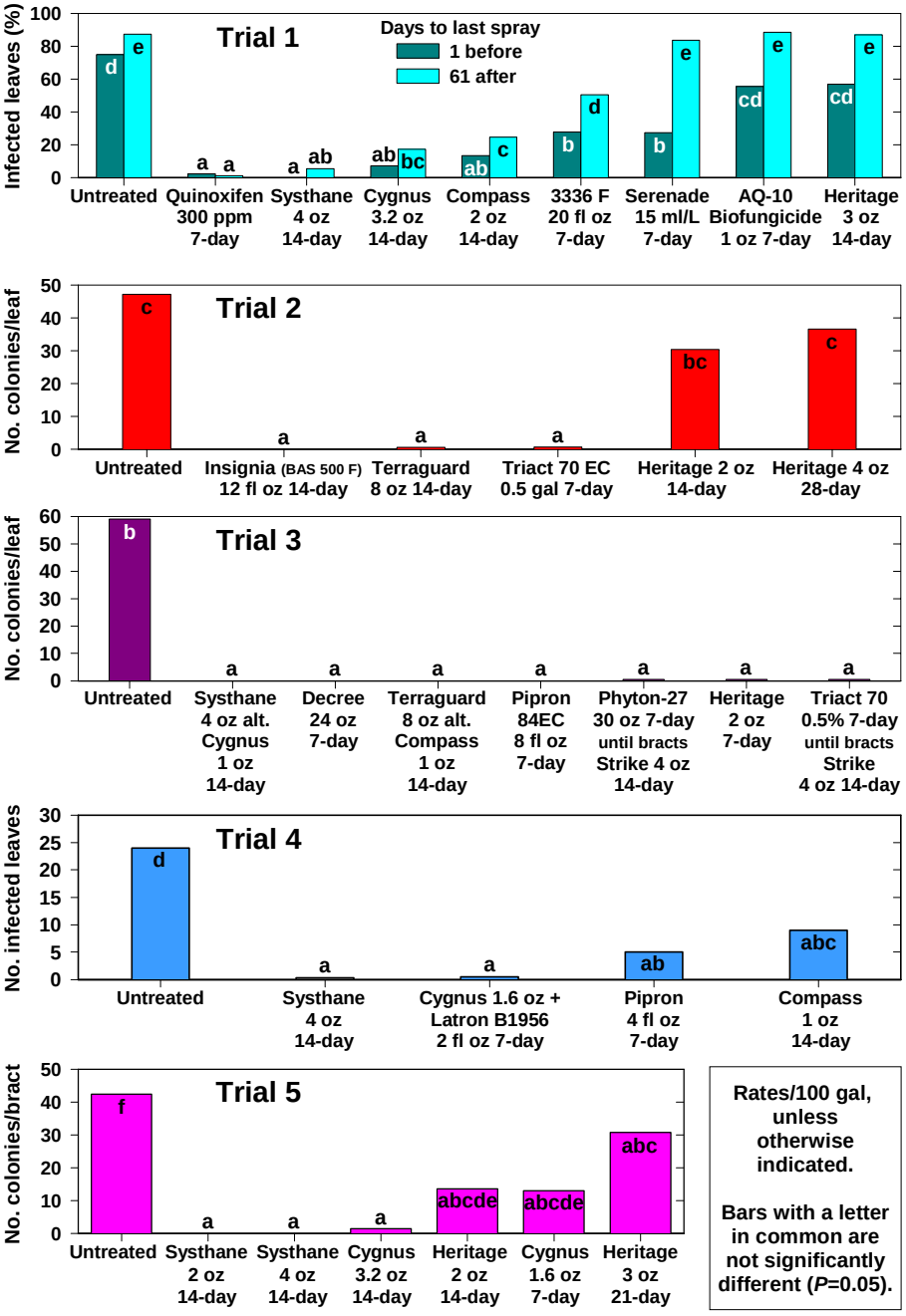
Untreated vs Cygnus.

Untreated vs Heritage.

Untreated vs Serenade.

Untreated vs Systhane.

Powdery Mildew on Poinsettia 'Freedom Red'



fungicides. Products with systemic activity were often superior and some were long lasting. Such products would be very helpful to growers implementing control measures prior to bract coloration to provide protection throughout the production and post-greenhouse phases. Fungicides with different modes of action must be rotated to prevent development of fungicide resistance in the powdery mildew pathogen.

IMPACT TO THE INDUSTRY

Research results may encourage the expansion of fungicide labels to include poinsettias.

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