

Special Research Report #118: Managing Powdery Mildew on Poinsettia

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BACKGROUND

Powdery mildew is a fungal disease of poinsettia caused by *Oidium* sp. Powdery mildew can occur on all above-ground plant parts and results in a white, powdery or fluffy appearance. While severe infection can cause yellowing and withering of leaves, even a light infection can render plants unmarketable. The first colonies of powdery mildew can occur on the undersides of the lower leaves where they may 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 for even a highly effective fungicide to control this disease. Also, the white fungal colonies present before the fungicide treatment will 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.



Powdery mildew on poinsettia

Fungicides used in trials.

Fungicide	Active ingredient	Registered
AQ-10 Biofungicide	<i>Ampelomyces quisqualis</i>	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
Quinoxifen	quinoxifen	no
Serenade	<i>Bacillus subtilis</i>	no
Strike 25WDG	triadimefon	yes
Sythane 40WSP	myclobutanil	yes
Terraguard 50W	triflumizole	yes
Triact 70 EC	neem oil extract	yes

MATERIALS & METHODS

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 trials to serve as a source of inoculum.

RESULTS

Several fungicides provided outstanding control and included Systhane, Terraguard, and the strobilurins. In addition, it was noted that applying Heritage every 7 days appeared to be better than a longer application interval.



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



Untreated vs Compass.



Untreated vs Cygnus.



Untreated vs Heritage.



Untreated vs Serenade

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, and included 3336 F, Compass, Cygnus, Quinoxifen, and Systhane. Quinoxifen and Systhane were especially effective.

CONCLUSIONS

Powdery mildew on poinsettia was managed by the timely application of effective fungicides. Products with some systemic activity were often superior and some were long lasting. Such products would be especially helpful to growers wishing to implement control measures prior to bract coloration to provide protection through production and post harvest. Fungicides with different modes of action should be rotated to prevent development of fungicide resistance in the powdery mildew pathogen.

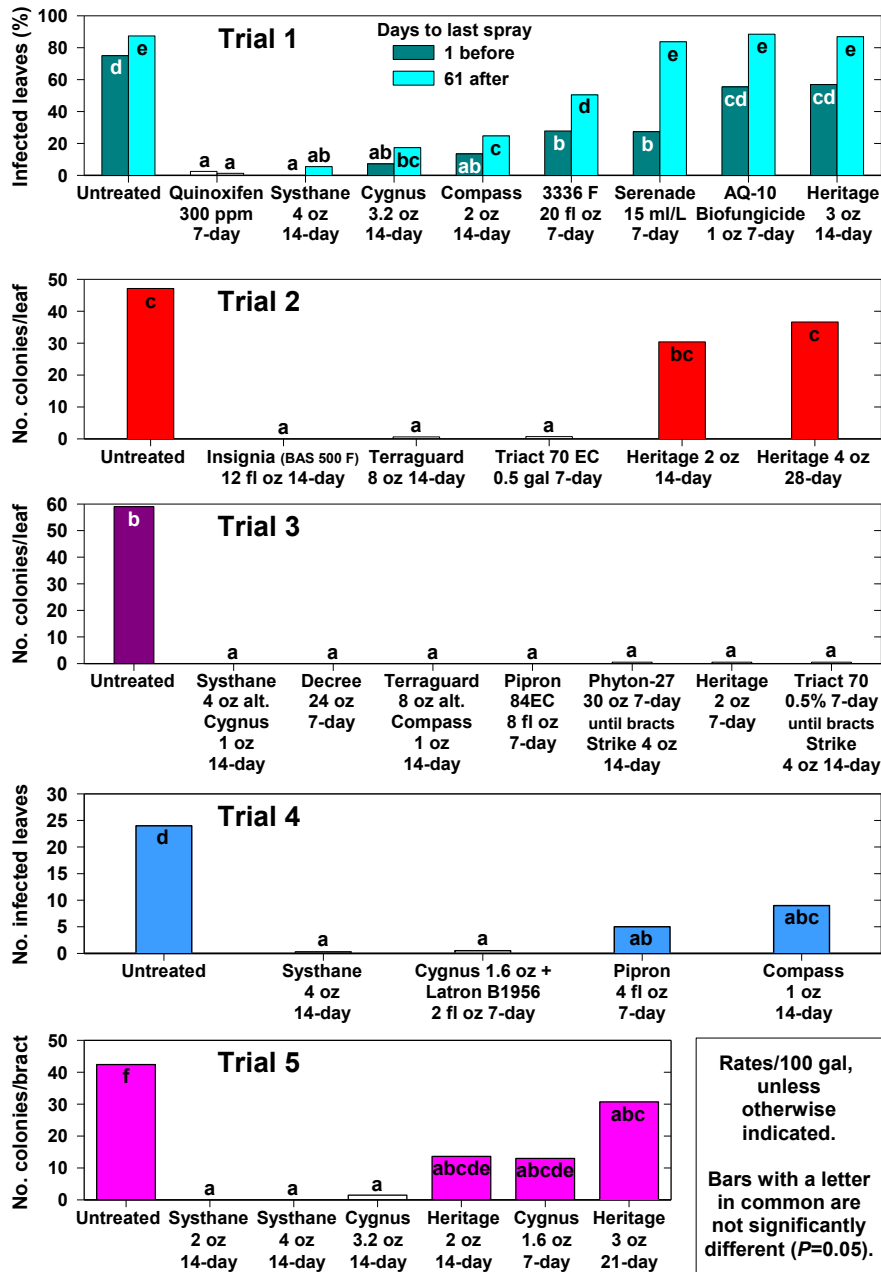
INDUSTRY IMPACT

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



Untreated vs Systhane

Powdery Mildew on Poinsettia 'Freedom Red'



2013 UPDATE

Since the report was originally published, some fungicides listed are no longer available while others have gone on to become registered for use on powdery mildew of ornamentals.

Some of the most highly recommended current fungicides for controlling powdery mildew on poinsettias and their active ingredients are:

- Terraguard SC (triflumizole),
- Eagle EW (myclobutanil),
- Compass 50WDG (trifloxystrobin),
- Heritage 50WG (azoxystrobin),
- Insignia 20WG (pyraclostrobin),
- Pageant 30WG (pyraclostrobin/boscalid),
- Palladium 62.5WDG (cyprodinil/fludioxonil),
- Strike 50WDG (triadimefon) and
- Zyban 80WSP (thiophanate-methyl/mancozeb).

Other fungicides that are labeled for use on powdery mildew but may not limit severe infections include:

- Cygnus 50WG (kresoxim-methyl),
- Disarm 480SC (fluoxastrobin),
- Phyton-2721EC (copper),
- Triact 70EC (neem oil extract) and
- 3336 F (thiophanate-methyl).

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

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