

Special Research Report #113: Disease Management

Managing Powdery Mildew on Gerbera

M.K. Hausbeck, Professor and Extension Specialist

Department of Plant Pathology, Michigan State University, East Lansing, MI 48824-1311



American
Floral
Endowment

FUNDING INDUSTRY SOLUTIONS
TODAY & TOMORROW

Phone: 618/692-0045

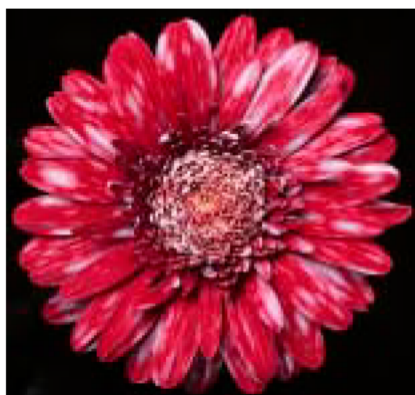
Fax: 618/692-4045

E-mail: afe@endowment.org

Website: www.endowment.org

BACKGROUND

Powdery mildew is a fungal disease of gerbera caused by *Erysiphe cichoracearum*. This pathogen infects many plants, including annual and perennial flowers, and vegetables. It can occur on all aerial plant parts including the flowers. Severe infections can cause death.



Severely infected flower.

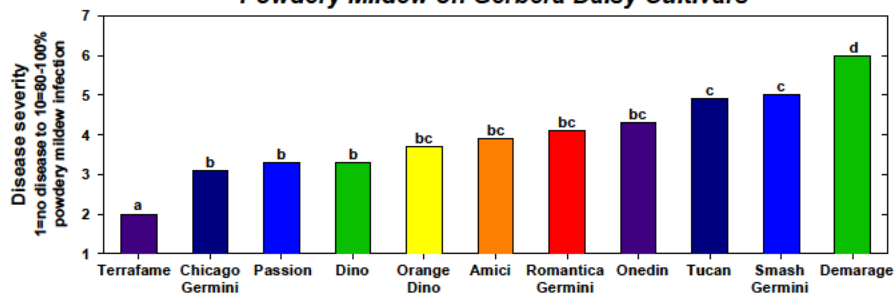


Powdery mildew conidia.

Fungicides evaluated in trials.

Fungicide	Active ingredient	Registered
Camelot, Phyton-27	copper	no, yes
3336 WP	thiophanate-methyl	yes
Compass	trifloxystrobin (strobilurin)	no
Cygnus	kresoxim-methyl (strobilurin)	yes
Decree WDG	fenhexamid	no
Eagle 20, Systhane	myclobutanil	yes
FirstStep	potassium bicarbonate	no
Heritage	azoxystrobin (strobilurin)	yes
Insignia	pyraclostrobin (strobilurin)	no
Milsana	giant knotweed extract	no
Rubigan	fenarimol	no
Spectro	chlorothalonil + thiophanate-methyl	yes
Strike	triadimefon	yes
Terraguard	triflumizole	yes
TwoSome	chlorothalonil + fenarimol	no

Powdery Mildew on Gerbera Daisy Cultivars



MATERIALS NEEDED

Initially, 11 cultivars of gerbera were evaluated in the greenhouse for their resistance to powdery mildew. Plants were not treated with any fungicide for this trial.

Second, on a commercial farm, registered fungicides and new products were evaluated in five trials for their ability to control powdery mildew on field-grown 'New Mexico Red' and 'Michelle.' Treatments were applied to runoff at 14-day intervals. Plants were evaluated during the course of

the trial, and after the last spray was applied.

RESULTS

'Terrafame' was the cultivar most resistant to powdery mildew. Five cultivars had less than 20% of their foliage diseased. They were: 'Chicago Gemini,' 'Passion,' 'Dino,' 'Orange Dino,' and 'Amici.' 'Demarage' was the most susceptible to powdery mildew with 40-50% of its foliage diseased.

Many fungicides were

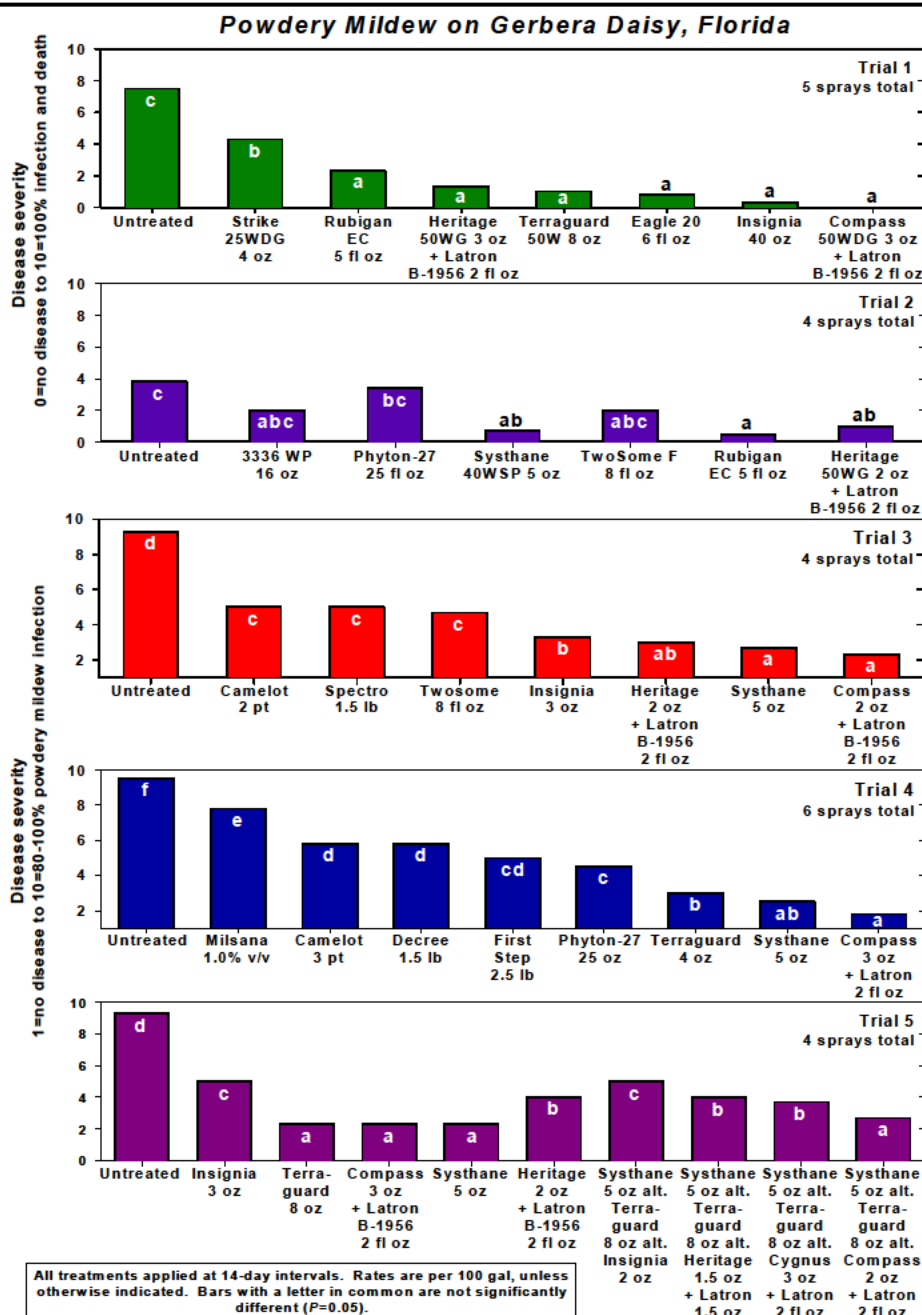
effective in limiting powdery mildew. Products that have some systemic activity, e.g., the strobilurins, Terraguard, Eagle 20, Systhane, and Rubigan, were consistently effective. Products that showed activity but allowed mildew development (disease ratings greater than 4) included Strike, Milsana, Camelot, Decree, FirstStep, Phyton-27, Spectro, and TwoSome.

CONCLUSIONS

Powdery mildew is a pathogen that can increase rapidly, making flowers unmarketable. In our study, 'Terrafame' was a resistant variety, whereas 'Demarage' disease-prone. Fungicides differed in their ability to limit disease. While some of the fungicides included in this trial do not include gerbera on their label, they could be useful in a management program. This research may lead to label expansion to include gerbera.

IMPACT TO INDUSTRY

- Grow gerbera cultivars that are resistant to powdery mildew. They can reduce the number of fungicide applications needed.
- Powdery mildew on gerbera can be managed through the timely application of effective fungicides.
- Products that have some systemic activity are especially effective. For maximum efficacy, adhere to the application interval.
- Rotate fungicides with different modes of action.



- Since strobilurin fungicides affect powdery mildew similarly, they should not be relied on exclusively.
- Other unregistered but effective products could be helpful to gerbera growers in the future.

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

For additional information contact Mary Hausbeck at hausbec1@msu.edu.

2003 (November) © Copyright The American Floral Endowment. All Rights Reserved