

# Special Research Report #114: Disease Management

## Managing Downy Mildew on Snapdragons

M.K. Hausbeck, Professor and Extension Specialist and J.M. Byrne, Former Graduate Student  
Department of Plant Pathology, Michigan State University, East Lansing, MI 48824-1311



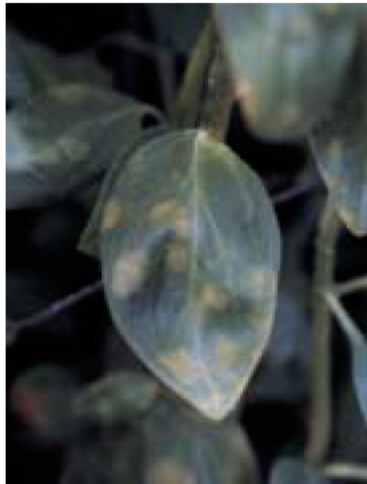
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*Downy mildew on field-grown snapdragon.*

### BACKGROUND

Downy mildew of snapdragon is caused by the fungus, *Peronospora antirrhini*. This disease causes spotting, cupping, and distortion of foliage; shortening of internodes; and terminal bud death of seedlings resulting in multiple flower stalks. This disease is difficult to control because it can rapidly become an epidemic and there are few fungicides that are highly effective.

### MATERIALS NEEDED

Seven snapdragon cultivars growing in a commercial production field in Florida were rated for downy mildew disease over two growing seasons. Ratings were based on the estimates of the percentage of infected plants within each bed.

Registered fungicides and new products were evaluated for their ability to control downy mildew of snapdragon in nine field trials. Treatments were applied to runoff at 14-day intervals.

### RESULTS

'Potomac Rose,' 'Potomac Apple,' and 'Potomac Dark Orange' had significantly less disease than the other cultivars. 'Rocket White' was the most susceptible cultivar in both growing seasons and became heavily diseased. Also, in the first year of the study, 'Potomac Early Pink' became so heavily diseased that it was not included in the second year of the study.

The fungicide Stature

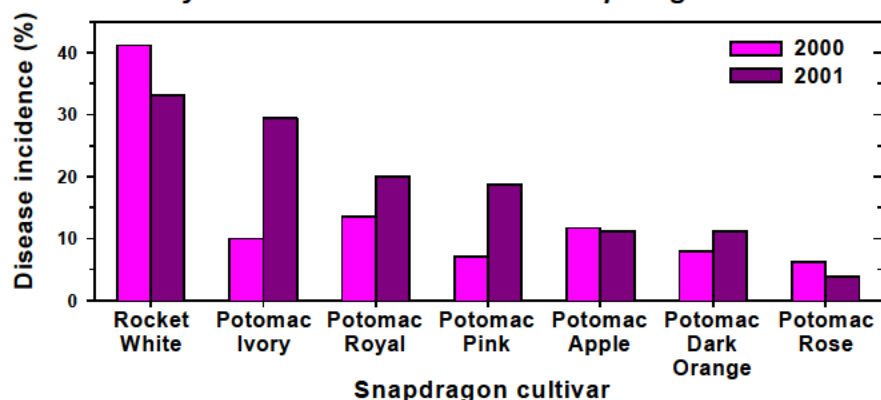
consistently limited downy mildew on snapdragon in all trials. Other products that were effective included: Mefenoxam 2, Curzate, Compass, Gavel, Aliette, and Ranman. Protect T/O and Echo 90DF produced inconsistent results.

### CONCLUSIONS

Selecting snapdragon cultivars that are less susceptible to downy mildew can be an important tool in disease control. Identifying fungicides that are effective against downy mildew ensures that control is maximized.

Mefenoxam 2 (industry standard) applied to the soil performed well in most of the trials. Stature, which is a relatively new product, performed very well in every trial. Ranman is currently an unregistered product that provided exceptional control in two trials. Products that appeared helpful but did not always perform as well as Stature included: Compass, Gavel (not registered), Echo,

**Downy Mildew on Field-Grown Snapdragon Cultivars**



**Fungicides used in Florida field trials.**

Fungicide	Active ingredient	Registered
Aliette 80WDG	fosetyl-al	no
Compass 50WDG	trifloxystrobin	yes
Curzate 60DF	cymoxanil	no
Echo 90DF	chlorothalonil	no
Gavel 80WG	zoxium + mancozeb	no
Mefenoxam 2	mefenoxam	yes
Protect T/O	mancozeb	yes
Ranman 4SC	cyazofamid	no
Stature DM 50WP	dimethomorph	yes
Stature 69WP	dimethomorph + mancozeb	yes

Aliette, and Curzate (not registered).

**IMPACT TO THE INDUSTRY**

- Select cultivars that are less susceptible to downy mildew. This is an important management tool when used in combination with effective fungicides.
- Timely and repeated applications of an effective fungicide can limit downy mildew disease before it becomes epidemic.
- Information generated by the fungicide trials may encourage the expansion of fungicide labels to include snapdragons and other ornamentals susceptible to downy mildew.

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

For additional information contact Mary Hausbeck at [hausbec1@msu.edu](mailto:hausbec1@msu.edu).

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**Downy Mildew on Snapdragon**

