Greenhouse Pest Message, Sept. 5, 2025

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Downy mildew diseases are a significant concern to the greenhouse industry as they affect many ornamental crops causing leaf drop and plant death. Spread is rapid causing serious losses in a short time. Downy mildews are difficult to control once established and often initial symptoms are difficult to identify.

The downy mildew pathogen is referred to as a water mold (oomycete) that is more closely related to Pythium and Phytophthora than to fungi. Most of the downy mildews are host specific and infect only closely related plants. Downy mildews are obligate parasites that need a living host to grow and reproduce.

Some ornamentals prone to infection include snapdragon, salvia, alyssum, pansy, rose, primula, Osteospermum, coleus, statice, and cleome. Herbaceous perennials such as Aster, Agastache, Buddleia, Coreopsis, Digitalis, Geum, hardy geranium or cranesbill, Lamium, Papaver, Rudbeckia, Veronica and Viola are also susceptible to different downy mildews. Symptoms vary depending upon the specific downy mildew pathogen, the host plant, and environmental conditions. Some of the more common symptoms of downy mildew include yellow or brown patches on the leaves that may be bound by leaf veins. With downy mildew infections, a coating of sporulation may be seen on the leaf undersides, especially during humid conditions.

Downy mildews develop during cool (50-75° F), wet conditions with high relative humidity above 85% at the leaf surface. Prolonged periods of leaf wetness favor downy mildew sporulation, spread and infection. Look on underside of leaves, early in the day. Scout routinely, at least once a week. Use a hand lens to look for blooms of sporangia. Downy mildews must be managed preventively with different classes of fungicides. Do not carry over plants from one season to the next because they may be carrying the disease without showing obvious symptoms. Choosing less susceptible varieties is an important management tool.

Management

• Inspect incoming plugs or plants carefully for signs of downy mildew upon arrival.

• Select less susceptible cultivars, if available.

• Monitor susceptible plants at least once a week.

• Promptly remove diseased plants and debris.

• Reduce humidity levels in the greenhouse by using proper plant spacing.

• In the greenhouse, proper environmental management with the use of computerized controls, HAF fans, heating and venting to reduce humidity levels is necessary

• Water early in the day.

• Avoid overhead irrigation and use drip irrigation whenever possible.

Plan on using preventive fungicide programs for highly susceptible crops. Top available fungicides listed below:

	Product	Active ingredient	FRAC code
Class A	Segovis	oxathiapiprolin	49
	Subdue MAXX	mefenoxam	4
	Adorn	fluopicolide	43
	Fenstop	fenamidone	11
	Micora	mandipropamid	40
	Orvego	ametoctradin/ dimethomorph	45/40
	Stature SC	dimethomorph	40
	Alude	phosphorous acid salts	33
Class B	Heritage	azoxystrobin	11
	Segway	cyazofamid	21
	Aliette	aluminum tris	33

2025 UCONN Sentinel Plots

This year there were sentinel plots at the UConn Research Farm in Storrs. These are trials to monitor for local downy mildew outbreaks as a way to monitor and alert growers if new downy mildews are observed. **Note** that this is only representative of local infection sources. Downy mildew spreads in air currents, however local epidemics may occur if the pathogen is brought in on plant material.
The plants for this sentinel plot were planted in a shade house with 40% shade cloth. Pots (5 gallon) contained ProMix BX potting mix. The plants received Osmocote per the label, and no supplemental fertilizer. Transplants were planted on 21-May. All plants received a spray of Conserve and Flagship to limit insect damage on 15-Jun. The trials will run till completion, ~October 20th.

The crops planted in the summer trial, 2025 included: Basil Genovese, Coleus Wizard Golden, Impatiens Accent White, Rudbeckia Goldstrum, Salvia Fairy Queen, and Cucumber Speedway.

Crop	Date Downy Mildew Detected[1]
Coleus Wizard Golden	July 15
Impatiens Accent White	ND[2]
Rudbeckia Goldstrum	ND
Salvia Fairy Queen	Aug 24
Basil Genovese	ND
Cucumber Speedway	Aug 1

[1] As of August 29th 2025
[2] ND=not detected