



Nora Catlin  
nora.catlin@cornell.edu



Margery Daughtrey  
mld9@cornell.edu

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## Downy Mildew on Rose

A few cases of downy mildew on rose have been seen in production this season. Inspect incoming plants carefully and continue to scout your crop throughout the season. Unnoticed symptoms have the potential to develop into a disease that can devastate crops.

Symptoms observed can vary, depending on the particular type of rose infected, making this disease a difficult one to diagnose and an easy one to miss if you are not looking carefully. Most commonly, small angular, tan to brown, leaf spots are seen and accompanied by sparse white fungal growth on the underside of the leaf spot. This fungal growth may not always be present or may be difficult to see without the aid of good lighting and magnification. Don't expect to



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see the dense heavy sporulation that you would see with downy mildew diseases like impatiens downy mildew or sunflower downy mildew. Downy mildew on rose can also cause pink-red speckling, cankers or streak-like spots on the canes, dark colored lesions on sepals, and/or leaf yellowing, desiccation—and catastrophic leaf drop.

Downy mildew on rose is often mistaken for other causes: leaf spots and speckles can mimic spray injury or symptoms of other diseases such as Botrytis or black spot, and cane cankers can appear similar to cankers caused by other pathogens. Seek the assistance of an extension specialist and diagnostic lab for proper identification and diagnosis. If you see any symptoms, don't wait to investigate! Early detection is critical to successful management.

Downy mildew of rose is caused by *Peronospora sparsa*. All types of roses are susceptible: wild roses and all cultivated roses including the popular Knock-Out rose and other shrub roses. In addition to roses, other hosts of this pathogen include caneberries (blackberries and raspberries), dewberries (*Rubus* spp.), and cherry laurel (*Prunus laurocerasus*). Remember that downy mildew pathogens are specific and tend to infect a small group of related plants, so don't worry about this pathogen spreading to plants other than those listed above.



All photos by Lynn Hyatt, Cornell University

Ideal environmental conditions for this disease are cool to warm (about 60-70F), humid, and wet. Keeping leaf wetness to a minimum and humidity less than 85% will help to manage the spread of rose downy mildew. Use careful irrigation practices, fans, ventilation, and good plant spacing to dry leaves as soon as possible and to keep humidity down.

It is very challenging, if not impossible, to eradicate this disease once established—regular, preventive use of fungicides is recommended. Fungicides reported to be consistently effective for rose downy mildew include mefenoxam (Subdue MAXX), dimethomorph (Stature), oxathiapiprolin (Segovis), dimethomorph+ametoctradin (Orvego), cyazofamid (Segway), mandipropamid (Micora), and phosphonate fungicides (e.g., Aliette, Alude, Fosphite, KPhite). Please note that Subdue MAXX must be tank mixed with another active ingredient when used as a foliar spray for downy mildew management; the label states: “Applications targeted for downy mildew diseases should always be in a tank mixture with a non-Group 4 fungicide”. (One tested option would be to combine Subdue MAXX with Micora.) Also labeled and will provide management: fluopicolide (Adorn), strobilurin-containing products (e.g., Heritage, Compass, FenStop, Insignia, Pageant), mancozeb (e.g., Protect, Dithane), and copper hydroxide materials. Chlorothalonil (e.g., Daconil) is also effective but is often phytotoxic to roses so it is not labeled for controlling downy mildew on roses. Rotate between products with different modes of action, making sure to work effective systemic products into the rotation. Follow all label recommendations, and restrictions. Not all products mentioned will be labeled for use in all states.



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**CONTRIBUTORS**

Dr. Nora Catlin  
Floriculture Specialist  
Cornell Cooperative Extension  
Suffolk County  
[nora\\_catlin@cornell.edu](mailto:nora_catlin@cornell.edu)

Dr. Chris Currey  
Assistant Professor of Floriculture  
Iowa State University  
[ccurrey@iastate.edu](mailto:ccurrey@iastate.edu)

Dr. Ryan Dickson  
Extension Specialist for Greenhouse  
Management & Technologies  
University of New Hampshire  
[ryan.dickson@unh.edu](mailto:ryan.dickson@unh.edu)

Thomas Ford  
Commercial Horticulture Educator  
Penn State Extension  
[tef7@psu.edu](mailto:tef7@psu.edu)

Dan Gilrein  
Entomology Specialist  
Cornell Cooperative Extension  
Suffolk County  
[dpg1@cornell.edu](mailto:dpg1@cornell.edu)

Dr. Joyce Latimer  
Floriculture Extension & Research  
Virginia Tech  
[jlatime@vt.edu](mailto:jlatime@vt.edu)

Heidi Lindberg  
Floriculture Extension Educator  
Michigan State University  
[wolleage@anr.msu.edu](mailto:wolleage@anr.msu.edu)

Dr. Roberto Lopez  
Floriculture Extension & Research  
Michigan State University  
[rglopez@msu.edu](mailto:rglopez@msu.edu)

Dr. Neil Mattson  
Greenhouse Research & Extension  
Cornell University  
[neil.mattson@cornell.edu](mailto:neil.mattson@cornell.edu)

Dr. W. Garrett Owen  
Floriculture Outreach Specialist  
Michigan State University  
[wgowen@msu.edu](mailto:wgowen@msu.edu)

Dr. Rosa E. Raudales  
Greenhouse Extension Specialist  
University of Connecticut  
[rosa.raudales@uconn.edu](mailto:rosa.raudales@uconn.edu)

Dr. Beth Scheckelhoff  
Extension Educator - Greenhouse Systems  
The Ohio State University  
[scheckelhoff.11@osu.edu](mailto:scheckelhoff.11@osu.edu)

Lee Stivers  
Extension Educator - Horticulture  
Penn State Extension  
Washington County  
[ljs32@psu.edu](mailto:ljs32@psu.edu)

Dr. Paul Thomas  
Floriculture Extension & Research  
University of Georgia  
[palthomas@uga.edu](mailto:palthomas@uga.edu)

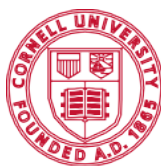
Dr. Ariana Torres-Bravo  
Horticulture / Ag. Economics  
Purdue University  
[torres2@purdue.edu](mailto:torres2@purdue.edu)

Dr. Brian Whipker  
Floriculture Extension & Research  
NC State University  
[bwhipker@ncsu.edu](mailto:bwhipker@ncsu.edu)

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