

# Managing Impatiens Downy Mildew in the Landscape

## *Plasmopara obducens*

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### IMPORTANCE

Impatiens downy mildew is an emerging disease problem that has resulted in severe defoliation and flower drop of impatiens. Impatiens downy mildew was first observed in Minnesota in 2011. Nursery & landscape impatiens are affected by the disease.

### IDENTIFICATION

- Leaves first appear light yellow or stippled yellow & green.
- Leaf edges curl downward; leaves appear wilted.
- Fluffy white growth occurs on the lower surface of leaves.
- Blossoms drop first. Next leaves fall off leaving bare green stems. Finally stems collapse and lay flat on the ground.
- Plants infected young are stunted and have small leaves.
- In very wet conditions, infected plant tissue becomes water soaked, soft and mushy.

### BIOLOGY

All varieties of *Impatiens walleriana* and hybrids with *I. walleriana* in its background are susceptible to impatiens downy mildew. Touch-me-not (*I. balsamina*) and several wild species of impatiens can also be infected. New Guinea impatiens (*I. hawkerii*) is highly resistant. Bedding plants of different genera are not susceptible to impatiens downy mildew.

Impatiens downy mildew is caused by *Plasmopara obducens*. This pathogen is not a true fungus but is a member of the Oomycota, often referred to as water molds. The pathogen can be introduced into a garden on infected transplants. In addition, impatiens planted into beds that were infected in previous seasons may become infected through oospores, long term resting structures produced by *P. obducens*. Although little is known about oospores of *P. obducens*, oospores of the closely related pathogen *Plasmopara halstedii*, which causes downy mildew of sunflower, can survive 8-10 years in the soil in zone 3. It is highly likely that *P. obducens* will survive the winter in infected beds in Minnesota.

*Plasmopara obducens* also produces sporangia on the lower surface of infected leaves. Sporangia can be splashed short distances to spread from plant to plant and can also become airborne and travel long distances on moist air currents. *Plasmopara obducens* thrives in cool (63-73F) moist conditions. Four hours of leaf wetness is necessary for sporangia to form. Under hot dry conditions, infected plants may show no symptoms of disease and produce no sporangia on the lower leaf surface.



**Figure 1:** Plants infected with Impatiens Downy Mildew.  
Photo by M.A. Hansen, Virginia Tech

Report Suspected Cases to  
Arrest a Pest  
1-888-545-6684 (Voicemail) or  
[Arrest.The.Pest@state.mn.us](mailto:Arrest.The.Pest@state.mn.us)

## MANAGEMENT

### Plants for Beds Infected with Impatiens Downy Mildew in Recent Years

Do not plant *Impatiens walleriana* or any hybrid containing *I. walleriana* in previously infected beds. Oospores will allow the pathogen to survive from one season to the next. Infection in subsequent years is highly likely. Alternative plants include coleus, caladium, begonia, and New Guinea impatiens.

### Plants for Beds with No History of Impatiens Downy Mildew

Impatiens can be planted into beds with no history of downy mildew but care should be taken to purchase disease free plants. Thoroughly inspect all transplants for yellowing foliage and downy growth on the lower leaf surface. Reject any plants with evidence of infection. Once a plant is infected, it cannot be cured. Choose a supplier that uses a regular fungicide treatment program to protect plants from downy mildew. Purchasing transplants produced in an area where landscape plants are not present during production (i.e. colder northern states) will further minimize the risk of receiving infected plants. Infection of landscape impatiens is still possible from windblown sporangia.

### Reduce Moisture and Humidity

Space plants so that air moves easily between plants and leaves dry quickly. Set sprinkler irrigation for early morning watering and providing deep and infrequent irrigation to reduce leaf moisture. Avoid evening applications of sprinkler irrigation. Use drip irrigation if possible to keep foliage dry.

### Fungicides

Several fungicides will protect plants from infection, but no fungicides will cure the disease once infection has occurred. In a few trials, plants drenched or treated with a granular application of Subdue Maxx at planting have remained disease free for 46 days to 2 months. In another study Adorn plus Heritage or Adorn plus Vital protected landscape impatiens for 5 weeks.

There is a high risk of impatiens downy mildew becoming resistant to certain fungicides if they are overused. Isolates resistant to mefenoxam have been identified in Europe. Rotate between different chemical families of fungicides (each family has a different FRAC Code) or tank mix two fungicides from different chemical families to avoid fungicide resistance developing in the USA. All label instructions must be carefully read and followed when applying a fungicide.

Home gardeners should contract with a licensed pesticide applicator to manage impatiens downy mildew fungicide applications.

### If Disease Appears

If infection is found, bag and remove the infected plants, any fallen leaves, blossoms and the closest neighbors. Remove the entire plant including roots. Do not compost infected plant material. Fungicides will not cure an infected plant and it is better to remove the plant to reduce spread of the pathogen to other impatiens in the area. At the end of the season completely remove all plant material to prevent overwintering of the pathogen.



**Figure 2:** Sporulation of Impatiens Downy Mildew.  
M. Grabowski, UMN Extension

**Table 1:** Fungicides registered for use against impatiens downy mildew in MN landscapes

FRAC	Active ingredient	Trade Names*
M3	mancozeb	Protect DF
4	mefenoxam	Subdue MAXX
11	azoxystrobin	Heritage
11 + 7	pyraclostrobin + boscalid	Pageant
21	cyazofamid	Segway
33	Phosphorous acid	Allude, Agri-Fos, Vital
43	fluopicolide	Adorn

\*Trade names indicate products registered for use in MN in 2012 but do not imply endorsement by UMN Extension. Products with the same active ingredient but a different trade name should also protect plants from impatiens downy mildew.