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Volume 9 Number 21 April 2020

Impatiens Downy Mildew Refresher: Use Fungicides Preventively

Don't let down your guard when it comes to impatiens downy mildew. In this article we provide fungicide recommendations for both susceptible and resistant cultivars.

Impatiens are one of the most popular bedding plants for shade gardens worldwide (Fig. 1). In 2011, impatiens downy mildew was an unpleasant surprise for greenhouse growers and gardeners. Sometimes pathogens can seem cyclic and reoccur following several years of being absent.

Seed and vegetatively propagated *Impatiens* spp. including common seed impatiens (*Impatiens walleriana*), double impatiens, and garden balsam (*Impatiens balsamina*) are susceptible. Fortunately, New Guinea impatiens (*Impatiens hawkeri*) appear to be tolerant or resistant to downy mildew. The downy mildew disease that affects *Impatiens* spp. is caused by a fungal-like microscopic organism called *Plasmopara obducens*. This downy mildew is unique to impatiens. Snapdragons, roses, impatiens, coleus, basil, and other crops are susceptible to downy mildew but each have a

Figure 1. Even with the threat of downy mildew, common seed impatiens (*Impatiens walleriana*) continue to be one of the most popular bedding plants for shade gardens worldwide. Luckily, resistant varieties have been recently released.



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unique downy mildew pathogen. While the disease may look similar on the different crops, they are quite different. The downy mildew on snapdragons cannot blight roses, nor can the downy mildew on impatiens spread to any plant outside of *Impatiens*.

In some cases, before the pathogen is halted, the loss of plant material can be severe. Given these recent problems, growers should review the downy mildew basics because this can be an explosive, destructive, and costly pest if it is not managed.

Don't forget to look under the leaves

An obvious sign of downy mildew is a white fuzz on the underside of the leaves but this can go unnoticed (Fig. 2, 5, and 6). Perhaps other than an especially severe case of *Botrytis*, no other disease causes such obvious fuzz, especially on the underside of the leaf. This disease should not be confused with spray residue which can occasionally result in a whitish film on the leaves. Infected plants become stunted and lose their leaves, flower buds, and flowers (Fig. 4).

Look for the disease

Downy mildew is often explosive and early detection is critical. The downy mildew pathogen produces plenty of spores called sporangia that are spread via air currents to nearby healthy plants. When scouting, turn the leaves over to look for white fuzz (Figs. 2, 5, and 6). When receiving plug and liners of susceptible *Impatiens* spp., scout them immediately by examining fully-expanded leaves, paying special attention to the undersides of leaves. Scout a minimum of 1 out of every 30 plants. If there are symptoms of downy mildew infection, such as distorted leaves, or yellow foliage, but no white fuzz, they still may be infected with the downy mildew pathogen but the conditions are

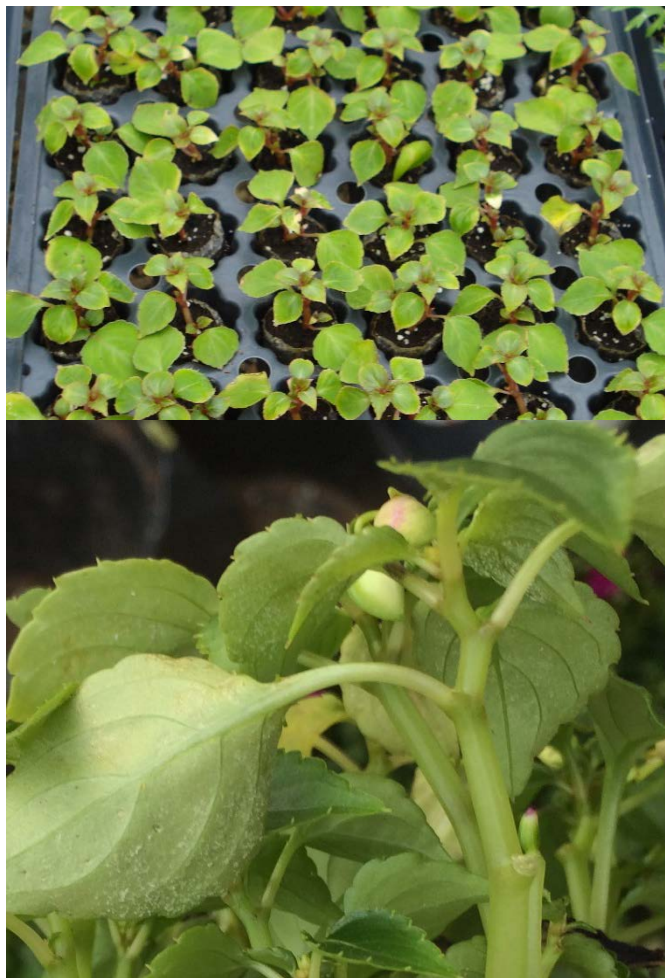


Figure 2. Symptoms of impatiens downy mildew on plugs. Initial symptom include chlorotic leaves and white fuzz on the underside of the leaves (photo: Nora Catlin).



Figure 3. A yellow leaf can indicate downy mildew infection (left), compared to a healthy green leaf (right).

not suitable for the pathogen to sporulate (Figs. 2, 3, and 5). Place the suspect plant in a plastic bag with a wet paper towel and leave it overnight. If the plant is infected, you should see white fuzz on the underside of the leaves the next morning.

Established impatiens crops should be scouted weekly. Be sure to check the impatiens that are in baskets and mixed containers as they can be hard to monitor. If diseased plants are discovered they should be placed in bags and discarded immediately. Diseased plants should not be placed in a cull or compost pile. Healthy-appearing plants that are right next to the diseased plants should also be discarded as they are likely to be infected but not yet showing symptoms. All remaining impatiens anywhere on the premises should be immediately treated with fungicides.

Downy mildew likes water and cool temperatures

Limit this disease by venting, reducing the time that leaves are wet, and keeping relative humidity to a minimum. Water plants at a time of day that allows the foliage to dry quickly. Downy mildew is a water mold because it needs water to grow and develop. Any strategy that reduces water, leaf wetness, and relative humidity in a greenhouse will help limit downy mildew.

Apply effective fungicides preventively

Systemic fungicides can be especially helpful in managing downy mildew because these products are absorbed by the plant in a limited way and can fight the downy mildew pathogen effectively. Subdue MAXX and Segovis are both systemic fungicides and are especially effective when applied as a drench. On page 4, there are two fungicide programs outlined. One is for the bedding impatiens and double impatiens that have not been bred to be resistant to downy



Figure 4. Impatiens stunted by downy mildew infection.

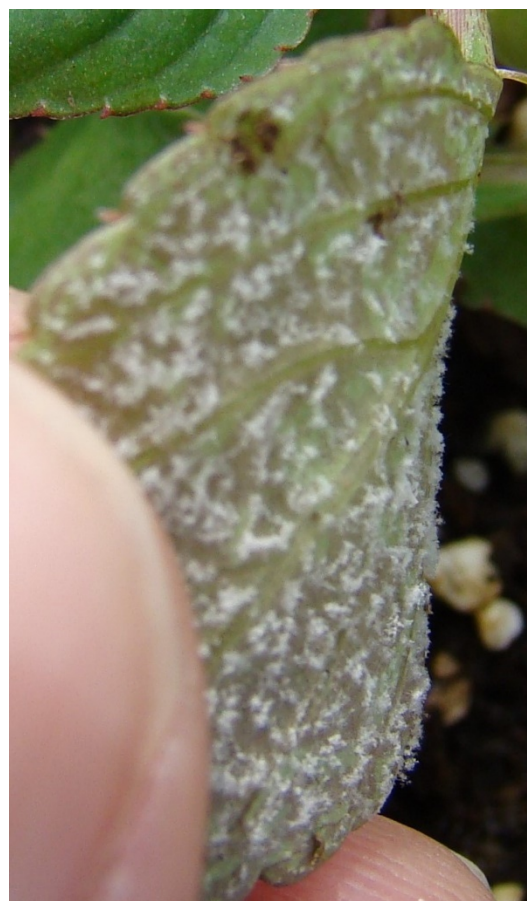


Figure 5. Downy mildew fuzz on the underside of an impatiens leaf.

mildew. The second program is for those impatiens cultivars (ie. Imara™ XDR impatiens and Beacon® impatiens) who have been developed to resist infection by the downy mildew pathogen.

Preventive Spray Program for Susceptible Impatiens Cultivars:

1. *First Application: (DAY 1)*

Subdue MAXX (1 fl oz/100 gal) *drench*.

Treat soon after plants received unless propagator has treated just before shipment.

2. *Second application: (DAY 7)*

Segovis* (3.2 fl oz/100 gal) *drench*

3. *Third application: (DAY 21)*

Segway (2.1-3.5 fl oz/100 gal; *spray*) or Orvego (11-14 fl oz/100 gal; *spray*) or Stature SC (6.12 fl oz/100 gal; *spray*) or Micora (4-8 fl oz/100 gal; *spray*)

4. *Final application, shortly before shipment*

Subdue MAXX (1 fl oz/100 gal) + Segovis* (3.2 fl oz/100 gal) *drench*

Spray Program for Resistant Impatiens Cultivars:

1. *Single application, shortly before shipment:*

Subdue MAXX (1 fl oz/100 gal) + Segovis* (3.2 fl oz/100 gal) *drench*.

Follow all label instructions and note warnings; local restrictions may apply. Product names are given for information purposes only and are not an endorsement, nor is any criticism implied of products not mentioned.

*Do not apply more than 9.6 fl. Oz. of Segovis to a single crop annually

Impatiens downy mildew: What to look for?

- Slightly chlorotic or pale foliage that can mimic a nutrient deficiency
- Inconspicuous mottling and stippling
- Downward curling or distorted leaves
- White fuzz on the undersides of leaves
- Stunted plant growth and small leaves
- Leaf and flower bud and flower drop resulting in leafless stems



Figure 6. White fuzz on the underside of a double impatiens leaves (photo: Nora Catlin).

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