



**Figure 1. Impatiens displaying chlorosis and drooping leaves.** (E. McGinnis, NDSU Extension Horticulture)



**Figure 2. Leaf exhibiting downy growth.** (E. McGinnis, NDSU Extension Horticulture)



**Figure 3. Cool and humid conditions facilitate downy growth.** (E. McGinnis, NDSU Extension Horticulture)



**Figure 4. Impatiens downy mildew can kill the entire plant.** (A. Windham, University of Tennessee)

# Impatiens Downy Mildew:

## A Threat to a Favorite Shade Plant

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Impatiens downy mildew, a destructive disease of standard impatiens (*Impatiens walleriana*), was discovered in greenhouses in 2004. By 2012, this disease was prevalent across the U.S. and had been confirmed in 33 states, including Minnesota and Iowa.

Impatiens downy mildew was first detected in North Dakota in 2013. While producers and retailers routinely scout their stock for diseased plants, being vigilant when purchasing and planting standard impatiens is important for homeowners to prevent the spread of this disease across North Dakota.

### Signs and Symptoms

Early symptoms are easy to miss. They include a subtle yellowing (chlorosis) or stippling of infected leaves (Figure 1). As the disease progresses, these leaves curl and droop. The underside of the leaves may display a white, downy growth (Figures 2 and 3). This downy growth is composed of sporangia (spore-bearing structures) and is apparent under cool, humid conditions.

Advanced disease symptoms include blossom and leaf drop. If immature plants are infected, then leaf and whole-plant stunting may occur. Eventually, the infected plants will collapse (Figure 4).

### Biology of the Disease

Impatiens downy mildew is caused by *Plasmopara obducens*, a water mold. Once infected plants are introduced into the garden, the disease can spread via zoospores, asexual spores that can travel by swimming in water films. These spores are dispersed by rain splash and wind.

This disease is most severe under cool, humid conditions. Resting spores, called oospores, may persist in the soil for long periods of time and can lead to new infections of standard impatiens planted in the same site in subsequent years.

### Disease Management

#### Preventive Care

The best way to avoid this disease is to buy standard impatiens plants that appear healthy (Figure 5). If your plants become infected, removing them from your garden as quickly as possible is extremely important.

When disposing of diseased plants, dig them up and place them in sealed garbage bags. Do not attempt to compost the diseased plants because they will contain long-lived spores (oospores). Be sure to plant an alternative species in that bed the following year.



**Figure 5. A healthy planting of standard impatiens.** (E. McGinnis, NDSU Extension Horticulture)



**Figure 6. New Guinea impatiens mixed with other shade annuals.** (E. McGinnis, NDSU Extension Horticulture)



**Figure 7. Torenia or wishbone flower.** (E. McGinnis, NDSU Extension Horticulture)



**Figure 8. Coleus with begonias in a container.** (E. McGinnis, NDSU Extension Horticulture)

## Alternative Shade Plants

Impatiens downy mildew is a disease limited to standard impatiens (*Impatiens walleriana*), balsam impatiens (*Impatiens balsamina*) and a few wild species. Fortunately, New Guinea impatiens (*Impatiens hawkeri*) appears to be highly resistant to the disease; therefore, it is a good alternative for the shade (Figure 6).

However, keep in mind that New Guinea impatiens grows taller than standard impatiens (12 to 30 inches, depending upon the cultivar) and requires good drainage. The SunPatiens series of impatiens, a hybrid between New Guinea impatiens and standard impatiens, also demonstrates superb disease resistance. However, the SunPatiens series flowers more prolifically if grown in full sun than in shade.

While gardeners have planted standard impatiens year after year, the spread of impatiens downy mildew is a wonderful excuse to try other shade plants. Wishbone flower (*Torenia fournieri*) is a superb shady garden performer (Figure 7) in areas sheltered from the wind and forms compact mounds that work nicely in the front of the garden bed.

The Clown and Duchess series feature plants in a multitude of colors, but the violet and blue shades are the most stunning. The Clown series grows 8 to 10 inches tall and spreads 10 to 12 inches, while the Duchess series is smaller and grows to a height and width of 6 to 8 inches. Newer vegetatively grown plants such as the Summer Wave series are great plants for hanging baskets and containers.

Wax begonias (*Begonia x semperflorens-cultorum*) are one of the most common bedding plants for shade (Figure 8). Their compact habit works well as edging at the front of the garden bed or as filler in a container. Flowers colors include white, yellow, pink and red. To add interest beyond their blooms, choose bronze or reddish foliage. When grown in partial shade and moist soils, wax begonias are reliable summer and fall bloomers.

To prevent fungal issues, plants should not be spaced too closely together. Considering their tropical origins, take care not to plant wax begonias until the soil has warmed or else the plants may be stunted.

Foliage plants can infuse brilliant color into the shade. Coleus (*Solenostemon scutellarioides*) produces lush growth in partial shade (Figure 8). For a low-maintenance container, use three coleus plants in contrasting colors. Make sure to pinch off the tip for bushier plants.

Polka dot plant (*Hypoestes phyllostachya*) is another reliable performer. For a stunning change of pace, consider the iridescent beauty of Persian shield (*Strobilanthes dyerianus*), a plant that features magnificent purple leaves with green veins. Persian shield serves as a perfect complement to silver plants.

## For Additional Information

Warfield, C.Y. Downy mildew of impatiens.

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