

IMPATIENS DOWNY MILDEW:

A Practical Approach for Landscape Gardeners

Impatiens are fundamental plants in the home and commercial landscapes. In some regions, a fungal disease called impatiens downy mildew threatens this popular flowering annual, and potentially profit margins. Knowing what to do—and when—can be critical to business success.



Symptoms of impatiens downy mildew may include yellowed foliage, leaf loss and reduced flowering.



It is not unusual for some portions of a landscape bed to be more affected than others.



An impatiens leaf showing the distinctive white 'down' on the underside of the leaf caused by impatiens downy mildew.

Understanding impatiens downy mildew: signs and symptoms

The causal agent of impatiens downy mildew is *Plasmopara obducens*, a "water mold" or oomycete. It only infects the common garden impatiens, *Impatiens walleriana*, and garden balsam, *I. balsamina*. New Guinea impatiens (*I. hawkeri*) such as Sonic® and Super Sonic® are highly tolerant of this disease.

Plants infected with this disease can look reasonably healthy, but only from a distance. They may appear less vigorous than usual with yellowish or pale green foliage and mild, inconspicuous mottling. These subtle symptoms can often be overlooked or mistaken for other problems such as nutrient deficiency, root rot, or even spider-mite injury. As the disease progresses, more obvious symptoms may include stunted plant growth, wilting, downward curling or distorted leaves, severe leaf drop and plant collapse.

The most distinct sign of impatiens downy mildew is white to light gray downy 'fuzz' on the undersides of the leaves. Since this growth is only visible on the undersides of the leaves, it is possible to miss it. Under some conditions, impatiens may be infected with the disease without showing any symptoms for a period of time; when the weather becomes favorable for the disease, however, the plants can suddenly show symptoms. Nutrient-deficient plants tend to show the disease sooner than those that are well-fertilized.

Disease triangle: environment + inoculum + susceptible plants

Impatiens downy mildew can be introduced to the garden from infected plants or wind currents carrying aerial spores from neighboring plants. These aerial spores, called sporangia, will germinate and infect impatiens under cool, moist conditions. Temperatures ranging from 59°F to 73°F with high humidity, rain or prolonged irrigation are ideal conditions for the disease. Impatiens downy mildew also produces overwintering spores, called oospores, which can survive in plant debris, including debris in the ground, to USDA hardiness zone 5 (-15° F). *Once a plant has impatiens downy mildew, it cannot be cured, so avoiding the disease is key.*

Responding to impatiens downy mildew

A solid strategy of prevention and using alternative crops when needed can help when dealing with potential infections of downy mildew of impatiens. Some parts of the United States are unaffected by impatiens downy mildew, and simple preventive measures are all that are needed. In areas where downy mildew of impatiens is established and wide-spread or preventive treatments are impractical, it may be necessary to consider planting alternative species. This would be most important if the landscape bed has a history of infected plants in the previous season.

Preventive measures

Start with smart **cultural controls** that minimize the source of inoculum and also avoid an environment conducive to developing impatiens downy mildew.

- Before planting, and at the end of every season, remove as much plant debris as possible including leaves, stems and roots.
- Purchase disease-free impatiens. In early 2012, growers were alerted to impatiens downy mildew through magazine articles, Cooperative Extension efforts, industry meetings and webinars. Fungicide rotations can be highly effective to prevent this disease while the plants are in production.
- Inspect all impatiens that are purchased for planting, looking on the lower leaf surface for the fuzzy sporulation.
- Consider planting impatiens when air and soil temperatures are warm. If a region is experiencing an extended cool, moist spring, it may be appropriate to delay planting for a few weeks. Impatiens grow slowly under those conditions and will grow rapidly when planted later.
- Set automatic sprinkler irrigation to run early in the morning, never in the evening or during the night. Better yet, use drip irrigation to avoid getting water on the leaves.
- Inspect planting beds. If small outbreaks of impatiens downy mildew are found, remove the affected plants and neighboring plants immediately. Place the debris, including roots and fallen leaves, in plastic bags and close them to avoid spreading the spores. These plants should not be composted. Make note of the planting areas, and avoid re-planting impatiens in these beds next year.

Fungicides

Fungicides are important tools to manage this disease and protect the investment in plants and labor. The products listed below are systemic fungicides labeled for use in the landscape. The active ingredients effectively protect plants from impatiens downy mildew as well as root and stem rots, caused by *Phytophthora* and *Pythium spp.*, when applied as a soil treatment.

PRODUCT	APPLICATION
Subdue Maxx® fungicide	Foliar Spray or Soil Drench
Heritage® fungicide	Foliar Spray
Potassium Phosphite	Foliar Spray

Consider making applications to landscape beds after transplanting in the spring, particularly when cool, moist conditions prevail or when disease pressure is known to be high in the region. Environmental conditions in the fall are also favorable for this disease. Keep in mind that oospores of impatiens downy mildew

can overwinter in many parts of North America; a preventive fungicide treatment in late summer may help protect impatiens until first frost. This application may not only prevent an outbreak of impatiens downy mildew at this time, but also preserve planting options for the following spring. Avoid repeated applications of the same active ingredient to reduce the risk the disease will become resistant.

Creative substitutions

Begonia and coleus are not the only plants that can be substituted for impatiens. The list of plants provided below can offer a wide color range with new and exciting textural qualities. Some plants are most familiar as “Full Sun” annuals; consider planting these varieties in shady areas, despite what has been recommended in the past. Combinations of these plants can give growers a creative edge in the marketplace.

FOR TRADITIONAL SPRING PLANTING IN SHADE

- > **Begonia** Bada Bing® and Bada Boom®, Eureka™, Varsity™, Braveheart®, Volumia™
- **Lobelia** Techno®
- **New Guinea Impatiens** Sonic, Super Sonic
- **Nicotiana** Saratoga™
- > **Salvia** Salsa®
- **Torenia** Duchess™

FOR FALL AND WINTER PLANTING IN MILD CLIMATES

- **Cyclamen** Laser™, Laser Synchro™, Sterling™
- **Pansy** WonderFall™, Colossus™, Delta™, Karma™, Mammoth®, Mariposa™, Sky™
- **Viola** Endurio®, Patiola®, Penny™

FOR TRADITIONAL SPRING PLANTING IN PART SHADE

- > **Begonia** Bada Bing and Bada Boom, Eureka, Varsity, Braveheart, Volumia
- **Dipladenia** Rio™
- > **Euphorbia** Euphoric™
- **Geranium** Caliente®, Calliope®, Rocky Mountain™, Americana®
- > **Ipomoea** Sidekick™
- **Lobelia** Techno
- **New Guinea Impatiens** Sonic, Super Sonic
- **Nicotiana** Saratoga
- > **Petunia** Bravo™, Duvet™, Hurrah™, Storm™, Ultra™, Plush®, Ramblin™
- > **Petunia** Picnic™, Sanguna®, Whispers™
- > **Salvia** Salsa
- **Torenia** Duchess™
- **Vinca** SunStorm®, Cora®

> *Notates varieties also recommended for fall and winter planting in mild climates.*

Resourceful business protection

Impatiens downy mildew can be managed with appropriate care. When necessary, creative substitutions can be considered for new and updated landscape plantings.

