BALLTECH ON DEMAND™

DOWNY MILDEW ON IMPATIENS & BASIL

As a group, DM-causing pathogens are difficult to detect, they strike fast, they develop resistance to fungicides very easily, and managing outbreaks can be costly for you and your customers. Downy mildews are systemic (spread throughout infected hosts) and decline and eventual death of infected plants is almost always the result. By the time symptoms and signs appear, it's too late, so preventative management is critical. Here are a few ways you can keep out in front of downy mildew in your crops this year.

The best, first line of defense in the battle against DM is growing resistant varieties whenever possible. Producing DM-resistant crops sets your customers up for success and reduces the risk of disease ripping through your greenhouse or garden center. The most significant DM-resistant crop on the market right now is bedding impatiens (ex. Beacon from PanAmerican Seed), but plant breeders are constantly working on developing resistance in other crops affected by this group of diseases. Start with resistant plants. But beyond that, there are other best practices to follow.

Purchase seed and young plants only from trusted sources. *Plasmopara obducens* (the pathogen that causes IDM) is not seedborne, so this means it can only be *shipped* to you from one place in the supply chain … infected young plants. Note: this does NOT necessarily mean your supplier sent the pathogen to you that if IDM shows up in your impatiens. IDM infects hosts via airborne spores that can blow into your greenhouse and can survive in alternative hosts in the landscape such as jewelweed (*Impatiens capensis* and *I. pallida*). This does, however, highlight the importance of buying plugs from reliable suppliers who implement preventative DM control measures during plug production.

Peronospora belbahrii, on the other hand, which causes basil downy mildew, can be seedborne. To minimize the risk of bringing infected inputs into your greenhouse, only buy seed that has been tested for DM or plugs from young plant suppliers who only sow tested seed.

Implement preventative controls in-house. Even if you're growing DM-resistant genetics and you've sourced seed and young plants from reliable suppliers, you need to continue managing DM in susceptible crops on your benches. Downy mildews generally need cool temps (upper 50's to upper 60's °F) and high relative humidity to infect and develop. Minimize relative humidity in your greenhouse, avoid excessive wetting of foliage and increase airflow through the crop canopy to minimize risk of infection.

However, plant pathologists have worked hard to develop strategies to manage this tricky group of pathogens in ornamentals, and one thing is very clear: good cultural practices alone are almost never enough to keep DM from striking. The best method for controlling diseases like IDM is an integration of good production practices and an aggressive fungicide program with thorough rotation of FRAC codes/MOAs are being made between applications.

Many products are labeled for controlling downy mildew, but not all fungicides are created equal. If you want to take a deep dive into which fungicides control different downy mildews best, check out this IR-4 report, which contains recommendations based on almost 10 years of fungicide efficacy trials. Be forewarned, this IR-4 report may be a little "further down the rabbit-hole" than many of you may want to go, but there's excellent info to be found in this document.

For those of you who are looking to scratch the surface a bit more but not go down the rabbit-hole, check out the following links to some very user-friendly resources our Tech On Demand team put together on managing IDM and basil DM. As always, don't hesitate to contact a Ball Seed technical expert if you have any questions. Downy mildew is a tricky group of pathogens.
At-Risk Crops: Impatiens (video with Dr. Will Healy)
At-Risk Crops: Impatiens (PDF)
At-Risk Crops: Basil (video with your's truly)
At-Risk Crops: Basil (PDF)