



# Onion Disease – Downy Mildew

## What is Downy Mildew?

Downy mildew (*Peronospora destructor*) is a fungal disease that affects primarily onions and garlic. The disease is found in America, Africa, Europe, China, the Middle East, and New Zealand. It thrives in periods of cool and humid weather. Shallots, leeks and chives are also susceptible to downy mildew.



Downy Mildew will affect leaves, stems and bulbs turning green parts to yellow and ultimately resulting in cellular death<sup>1,2</sup>.

## What is the Damage Caused?

Downy mildew (DM) starts as fuzzy gray/white to purple spots on mature onion leaves. The leaves begin to change color in infected areas from green to yellow, and then eventually collapse. While the disease doesn't kill the onion plant, it often reduces growth. Onion bulb tissue may soften and shelf-life decreases. Presence of the disease is usually identified by infected areas in the field appearing as yellowish crop circles measuring approximately one meter in diameter.

## How to Manage DM in Onions?

### Cultural Management:

- Use disease-free bulbs and seeds (very few red onion cultivars are resistant to DM).
- Destroy all culled onions and other volunteer *Allium* (onion genus) plants.

**Fungicide Treatment Options:** Apply treatment at the first sign of disease. Thorough coverage of plant foliage is important for fungicide efficacy.

- Mancozeb (Ridomil Gold\* MZ) at 1.7-2.2 kg/ha (1.5-2 lb/acre). Do not apply directly to exposed bulb. Do not apply within 7 days of harvest. Wait 48 hours after application before reentering the crop.
- Fenamidone (Reason\* 500 SC) at 400 ml/ha (5.5 fl. oz/acre). Maximum one application before rotating to a fungicide with a different mode of action. Maximum four applications per season. Do not apply within 7 days of harvest. Wait 12 hours after application before reentering crop.
- Mefenoxam (Ridomil Gold/Bravo\*) at 1.7-2.2 kg/ha (1.5-2 lb/acre). Do not apply within 7 days of harvest for bulb onions and within 21 days of harvest for green onions. Wait 48 hours after application before reentering crop.

For more treatment options visit [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu)

\*Commercial name. The authors make no endorsement towards commercial brands mentioned in this document nor are the absence of other brand names an implication of our disapproval.

**Prepared by Frank Zalom, Emily Symmes, Mark Henderson and Mark Bell, July 2009**

**Sources:** Statewide IPM Program, Agriculture and Natural Resources, University of California <http://www.ipm.ucdavis.edu/index.html>

Fact sheet 737.20, Onions-Downy Mildew – Dept Plant Pathology, Cornell University [http://vegetablemdonline.ppath.cornell.edu/factsheets/Onions\\_Downy.htm](http://vegetablemdonline.ppath.cornell.edu/factsheets/Onions_Downy.htm)

**Photo Credit:** <sup>1</sup>Howard F. Schwartz, Colorado State University, Bugwood.org, <sup>2</sup>Jack Kelly Clark, Statewide UC IPM Program

**For more information visit:** International Programs: <http://ip.ucdavis.edu>

Copyright © UC Regents Davis campus, 2011. All Rights Reserved.