

Scouting for downy mildew

When to scout

Season-long scouting will lead to effective disease management. However, there are four periods of critical importance for thorough scouting:

- Start of the season as hop buds are breaking ground.
- At shoot training.
- When lateral branches are just beginning to emerge.
- Immediately preceding bloom to 4-6 weeks post bloom.

Early season scouting is crucial for determining the initial disease pressure in your yard. Shoot infection at training and during lateral branch development are both high consequence events that might require retraining and result in substantial yield loss if branches are infected.

The period around bloom and cone maturation is also a time where it is imperative to be scouting for downy mildew.

Newly developing cones are typically highly susceptible to infection. The scouting periods around training, lateral branch production, and bloom are when you want to deploy your most effective chemistries for control.

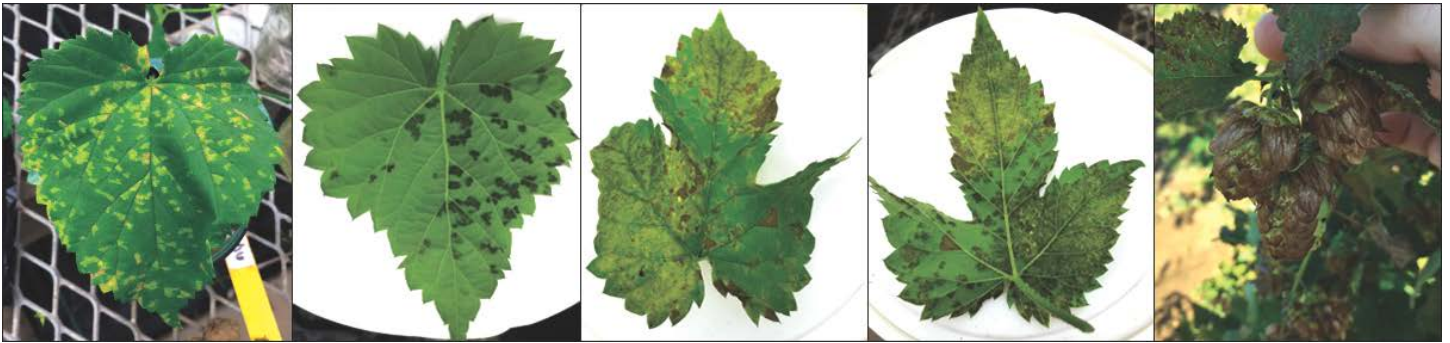


Where to scout

Downy mildew thrives in wet, humid conditions. As such, the best starting point for scouting downy mildew is in the basal foliage. This is where you will be most likely to come across basal spikes, which may be embedded within surrounding foliage, but will stand out as stunted, yellowed shoots with brittle, downward curling leaves.

You should pay special attention to areas in your yard that had downy mildew the previous season. As the season progresses, both the main shoots and lateral branches can become

infected, which will cause the shoots to terminate further growth, and often fall from the string. Scouting for detached bines can be suggestive of downy mildew, but there are usually still basal spikes present around ground level that are more telling.



How to scout

While scanning rows for basal spikes on the ground and yellowed bines detached from the trellis, pull anything suspect for a closer look. Aim to survey at least 100-200 hills when disease pressure is low. Foliar lesions will be angular, meaning that the edges will be conned by the leaf veins. The lesions on the upper side of the leaf are a response to black masses of spores that are produced exclusively on the underside of the leaves. Pull any basal spikes or leaves that appear to have yellow angular lesions.

Place the plant tissue in a plastic bag with a damp paper towel, and leave overnight in the dark at room temperature. If downy mildew is present, overnight the organism will produce black spores on the leaf bottom.

If you are noticing decreased vigor of plants in areas of your yard that had downy mildew in previous seasons, dig out a small portion of the rhizome of a poorly performing plant. Use a pocket knife to take a cross section of the root, and look for dark discoloration of the internal root tissue, which can be indicative of systemic downy mildew infection.

Authors: Bill Weldon, David Gent and David Gadoury – November 2017