

IDENTIFYING MYSTERY DISEASES

We often hear from growers seeing potential diseases in problem crops that tend to cause struggles each spring. Let's call these "mystery diseases," which cause certain crops to limp along year after year despite your best efforts to manage them.

Here are some questions to ask yourself when you suspect disease. Work through these steps and you should be closer to solving the issue at hand. And consider sharing these tips in an upcoming staff meeting with your production teams.

Have you gotten the disease-causing pathogen properly identified? In the battle against annually recurring disease, many of us get tunnel-vision and focus on symptoms that seem the most obvious, while something else is actually the causal agent. Properly IDing diseases in your crops is critical to avoid costly management strategies for the wrong disease and reduce crop losses quickly. Here's an example I dealt with last spring:

A grower producing potted rosemary was losing plants to what appeared to be a root rot issue. Sections of the plants would collapse suddenly and the whole plant would go down within a few days.

Sounds like Pythium or Phytophthora, right? After repeatedly treating with root-zone fungicides and seeing no reduction in losses, the grower reached out for help. I had them submit samples to a disease diagnostic lab, and the disease cultures found no presence of root rot. Botrytis was actually the culprit, though it did not present the "gray fuzzies" we're accustomed to seeing on infected crops. After adjusting environmental parameters and doing a few fungicide sprays, no more crops were lost.

What is your problem-pathogen's life cycle? Once you've got your recurring disease properly identified, understand how it multiplies, survives between crops and how infection occurs. For example, many fungal pathogens survive in fallen debris on the floor and under benches. If infested plant debris doesn't get cleaned up between crops, you can apply fungicides all day and still see persistent disease pressure in your greenhouse. If the source for new infections is still in your greenhouse, the problem will persist.

Are your control measures appropriately targeting the disease in question? Using the right active ingredients and applying disease control products properly has a major impact on controlling disease pressure. Looking up which products you can apply to control disease should be straightforward. Any number of resources like the [PNW Handbook](#) or [New England Greenhouse Floriculture Guide](#) provide up-to-date info on products labeled for controlling greenhouse diseases. Be sure to always read the product label and rotate between different modes-of-action (look up the FRAC numbers) to avoid pathogens developing resistance to

your disease control products of choice. Also, think critically about application method. For example, many products for controlling Phytophthora are labeled for both spray and drench applications. If root disease pressure is the concern, you'll get much better control with substrate drench, even if a heavy spray that gets solution onto the growing media may be faster and require less total fungicide.