

Under the Scope: Conifer needle diseases

Although the Clinic receives conifers samples throughout the year for analysis for a very wide variety of needle cast, blight, or rust pathogens, in New York State (NYS) April is a prime time to evaluate conifers for evidence of fungal infections so that you may prepare to treat trees at the proper time during the growing season. Many of the more common needle pathogens begin to produce infectious spores in the spring, and most of these fungi will infect the newly developing needles. By scouting in April, you may detect a pathogen and determine the severity of the infection before the fungus is active and before susceptible tissue develops.

Remember: Prevention of infection is key—fungicide treatments may have little or no curative effect.

There are of course, some exceptions.

- ***Cyclaneusma minus***, the fungus that causes Cyclaneusma needlecast may have mature fruiting bodies present all year, and may produce infectious spores any time temperatures are warm enough. This fungus also infects older needles, so it is not just the new growth that must be protected. Fortunately, most spore production occurs within the period from March through October, so treatments are not required during Nov-Feb. in the Northeastern U.S.
- ***Dothistroma (pini/septospora)*** and ***Ploioderma lethale***, some pathogens that commonly infect Austrian pine, are also a little different. They may not begin to infect new growth until mid-summer, after new needles are fully developed, but you can still scout for symptoms of these pathogens in April. With no fungicide specifically registered to manage Ploioderma, early scouting and removal of the most severely infected branches or trees may help reduce inoculum levels.



Fruiting bodies of some needle cast, blight, and rust pathogens found in the Northeastern U.S. From top L to R: Rhabdocline, Dothistroma, Ploioderma, and Chrysomyxa (x2). From bottom L to R: Rhabdocline with Swiss, Cyclaneusma, and Fir-fern rust.

We have been slowly boosting the number of fact sheets offered on the Plant Disease Diagnostic Clinic web site over the past year. For more information on common needle diseases of pine, Douglas-fir, and other conifers, please check out the fact sheets listed below.

Cyclaneusma needlecast—<http://plantclinic.cornell.edu/factsheets/cyclaneusamneedlecast.pdf>

Spruce needle rust (Weir's)—<http://plantclinic.cornell.edu/factsheets/chrysomyxaweirii.pdf>

Rhabdocline and Swiss needle casts—<http://plantclinic.cornell.edu/factsheets/douglasfirneedlecasts.pdf>

Ploioderma needle cast—<http://plantclinic.cornell.edu/factsheets/ploiodermানেedlecast.pdf>

Hemlock twig rust—<http://plantclinic.cornell.edu/factsheets/hemlocktwigrust.pdf>

White fir needle rust—<http://plantclinic.cornell.edu/factsheets/firfernrust.pdf>