

ASK THE EXPERT

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Diagnosing fungal disease

Problem: A number of spruce plants in our area are showing extensive needle drop and branch dieback. A majority of the plants have this problem, mostly on lower branches. We thought it might be due to fungal disease caused by *Cytospora*, but there are no typical symptoms of bluish-white pitching. Most plants were treated for mite and spruce gall aphid problem. This needle problem is gradually increasing. (New York)

Solution: Based on your description of the symptoms, the problem appears to be related to fungal disease. Since you were unable to observe bluish-white pitching, the problem is probably not related to canker disease caused by *Cytospora* sp.

Another disease, rhizosphaera needlecast, produces almost identical symptoms as cytospora canker. Most likely you are dealing with the needlecast disease caused by *Rhizosphaera kalkoffii*.

This fungus also spreads from lower branches upward. As the disease establishes and spreads upward, affected needles will turn yellow and then turn purple and finally defoliate. Infected two-year-old needles drop extensively in the second summer. Current-year needles may become infected in May or June, but disease doesn't become apparent until fall or the following spring. During this period the fungus produces small black fruiting bodies on the needle surface. They appear in a row along the needle length near the stomata. These can be examined using a hand lens.

Your local extension service may be able to help. Apply fungicides such as Daconil or Bordeaux mixtures when new growth starts and repeat again in late June to help manage this disease. Severely affected branches may not re-leaf, therefore consider providing selective pruning. Provide proper fertilizing, watering, mulching and pest management as needed to help improve plant health. Read and follow label specifications for better results.

Will dormant oils work on mites?

Problem: How good is dormant oil for controlling mites? If the problem is severe, can we apply low applications to clean them up? If so, what kinds of intervals? (Michigan)

Solution: The dormant oil is now preferably called horticultural oil, and is used during the growing season as well as dormant periods. Most dormant treatments will be done in mid-November through mid-March.

Among the mites, the two-spotted spider mite overwinters as a female in litter or mulch or other protected areas and is not normally found on the plant. Treating the target plants during this period is of no value.

Spruce spider mite overwinters on evergreen hosts like arbutus, juniper, hemlock and pine in the egg stage. This makes the pest very vulnerable to oil treatments. Remember that oil treatment will remove the blue color of blue spruce temporarily.

The honey locust spider mite overwinters as mature females in bark and bud crevices. Here again, a horticultural oil application should work well.

Another mite species vulnerable to "dormant" season sprays is the southern red mite. With proper coverage, this pest can be managed with oil treatments. If the infestation is severe, a second application may be beneficial. Because conditions for evaporation are poor during winter, the potential for phytotoxicity increases. Therefore, monitor pest activity in spring and reapply 2 percent oil as needed.

Remember that brands of oils from different vendors may not be the same. The quality of the oil dictates the effectiveness and/or potential phytotoxicity problems.

Pine dieback caused by disease, insects

Problem: Some of our clients' pines are showing dieback of six to eight feet terminal growth. Some of these have tunnels and frass when broken and examined and others have no dieback. We find a lot of resin droplets on twigs and at the base of needles. (Virginia)

Solution: This problem appears to be related to an insect as well as a disease. The twigs showing small tunnelling and frass are most likely caused by pine tip moth infestation. Affected terminals may show slight bending with discolored needles. This often mimics phenoxy herbicide injury and/or a disease called diplopedia tip blight caused by *Diplodia* sp.

Pine tip moths generally have one to two generations in the Midwest and four to six in the South and Western U.S. In your area, you may find this pest on Scotch, mugho, Monterey, loblolly and most other two- and three-needle pines. Apply Orthene or Cygon in middle to late April and again in mid-June when moths are active.

The twigs showing terminal dieback without the tunneling may be affected by the diplopedia tip blight disease caused by *Diplodia* sp. With a 10x hand lens, look for small black fruiting bodies, primarily at the base of the needles. Fruiting bodies may also be found on scales of two-year-old cones. This fungus mimics pine tip moth symptoms from a distance. Selectively prune affected plant parts and cones where feasible. Preferably prune when dry, and disinfect pruning tools between cuts in Lysol, diluted Clorox or rubbing alcohol to prevent further fungus spread. Apply fungicides such as Bordeaux mixture or Cleary's 3336 to help minimize disease incidence. Fungicide treatment should be made as new growth starts and before needles emerge from the sheath. Provide two to three more applications at 7- to 10-day intervals, depending upon any rainy periods.

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Mail questions to "Ask the Expert," LANDSCAPE MANAGEMENT, 7500 Old Oak Blvd., Cleveland, OH 44130. Please allow two to three months for an answer to appear in the magazine.