Horticulture Diagnostic Laboratory

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Diagnosing Rhododendron Problems

Rhododendrons are well suited to a Long Island garden. They appreciate the naturally acid pH of the soil, and the relatively mild winters. To diagnose their problems, one need only have a sense for the type of environment rhododendrons prefer, and some understanding of how to "read" the plants to interpret what elements are out of balance in their world. Some of the most common rhododendron symptoms caused by environmental stress factors, insects and diseases are discussed here.

Yellow Leaves: Chlorotic (pale) leaves are a sign of low fertility for all types of plants, not just rhododendrons. Don't panic if the spring growth on your rhododendrons looks a little pale, however, because it is natural for the foliage to hold its "spring green" color for a while. With rhododendrons, azaleas and other ericaceous plants, a yellow color between the leaf veins (**Fig. 1**) is usually a clue to a pH problem. If the soil is not sufficiently acidic, rhododendrons and their relatives will develop symptoms of iron deficiency, appearing as a breakdown of the green color between the leaf veins. On Long Island, this situation rarely develops, unless a well-meaning but poorly informed gardener chooses to dose his rhododendron with wood ashes or compost that has a high pH. Ashes are extremely alkaline, and are not appropriate for use with rhododendrons, blueberries or other acid-loving plants.

Brown Scorching along the Leaf Margins: Since they hold their broad leaves year-round, rhododendrons are adapted to avoid losing essential moisture during the winter. In cold weather you may notice that the leaves of rhododendron have curled under, and are folded back along the branches. This is not a wilt, but is the rhododendron's way of arranging its leaves so as to best retain moisture. Often rhododendrons will thrive most readily on the north side of houses, or in areas where an overstory of trees provides them with some shelter from the drying effects of sun and wind when the ground is frozen. Since moisture is first lost along the edge of the leaf blades, this is the main area where winter injury will appear (**Fig. 2**). Fungi may grow and sporulate on the scorched area, but they are not the reason for the dead tissue.

Brown Spots: Scattered brown spots (**Fig. 2**) may also

Fig. 1. Advanced symptoms of iron chlorosis on rhododendron leaves. *Note the only remaining green tissue is on the larger main veins.* (Ralph S. Byther, Oregon State University Extension, http://plant-disease.ippc.orst.edu/)

Fig. 2. Leaf scorch and leaf spot symptoms in early April as a result of winter injury (Photograph by Thomas Kowalsick, Cornell Cooperative Extension – Suffolk County)

appear on the leaf blades of rhododendron during the winter. These are usually reflections of poor health in the root system or in the branch - one common cause is rhododendron borer activity below the affected leaves. Rather than using fungicides to combat such spotting, the best approach is to use the appropriate cultural techniques to keep the plants healthy, so that they can better withstand the stresses of winter.

Occasional Dead Branches: This may mean one of two things: rhododendron borer or fungus attack. When branches are seen wilting and then browning on mature landscape specimens, quite often the cause is the rhododendron borer, *Synanthedon rhododendri*. This clearwing moth lays its eggs on the bark of the shrub, frequently in a branch crotch. The larvae tunnel into the branch, severely weakening it structurally. Pale, spotted and wilted leaves appear in the branch above the mined area.

Branches attacked by borers will often break off easily in the hand, and the tunneling of the insect can then be examined. Exit holes and sawdust provide additional evidence. The weakened branches should be pruned from the rhododendron, ideally before the larvae have matured and flown away. If rhododendron borer is more than a sporadic problem, you may want to use insecticide sprays in May when the adult is active, to prevent new infestations.

Fig. 3. A rhododendron infected with *Botryosphaeria* canker. Compare the normal reddish brown color of the bark of the live branch on the left with the darker brown, shriveled bark of the two infected branches on the right side of the photograph. (Photograph by Maria Tobiasz, L. I. Horticultural Research & Extension Center, Riverhead, NY)

Particularly on rhododendrons suffering from drought stress, the fungus *Botryosphaeria* may cause some dieback (**Fig. 3**) of individual branches. Again, it is important to prune out the branches which have been killed by this fungus, because they will otherwise be a source of spores which can start new infections. Always prune when plant surfaces are dry, to avoid spreading spores into the pruning wounds. To discourage *Botryosphaeria* dieback, it is also helpful to prune out the spent flower heads. Keep rhododendron properly watered during dry periods. Deep watering (providing 1 ½ to 2 inches of water) once every 2-3 weeks is more helpful than frequent and shallow watering (i.e. 15-20 minutes several times a week).

Fig. 4. Typical feeding injury (notches) by the black vine weevil. (Photograph by Michael Masiuk, Commercial Horticulture Extension Agent, Allegheny County, Pennsylvania http://woodypests.cas.psu.edu/FactSheets/InsectFactSheets/html/Black_Vine_Weevil.html)

Notches in Leaves: Sometimes rhododendron leaves will bear the marks of insect feeding. The most distinctive feeding pattern is that left by the snout of the black vine weevil, *Otiorhynchus sulcatus*. These nocturnal feeders leave behind evidence which looks like someone has run amok with a paper punch: tiny, semicircular holes (**Fig. 4**) appear at the edge of the leaves. This injury is tolerable up to a point, but the appearance of foliage injury is a sign that more serious damage may follow. By feeding on the root system and at the base of the stem, the larvae

of the black vine weevil can seriously weaken or even kill plants. When investigating the cause of death for a rhododendron, black vine weevil injury should certainly be considered. The grubs may sometimes be found in the soil around the roots: small, centimeter-long pale larvae with golden brown heads. More often, the larvae and adults are not in evidence, but girdling wounds where the bark has been eaten away can be found near the soil line, often rimmed by callus ridges.

Sudden Death: In addition to the girdling injury caused by black vine weevil larvae, there are several other reasons why rhododendrons may appear to die suddenly during the growing season. In a new planting, it is possible that plants were not properly established. It is important to loosen the root mass and provide a well-prepared planting hole for containerized rhododendrons, and to provide adequate moisture throughout summer and fall. It is also very important to avoid planting new rhododendrons too deep. Be sure that the root collar/flare is at or slightly above the soil surface. Because soils on Long Island are generally sandy, drought can be a real problem for the shallow-rooted rhododendrons. Mulching can help hold moisture in the soil. Occasionally, particularly when the planting area is not well-drained, rhododendrons may be lost to infection by the fungus *Phytophthora* which may invade root and vascular systems. Look at the roots for signs of decay (dark, soft cortical tissues) and scrape away the bark along the stem to look for the telltale vertical red streaks that indicate systemic invasion by *Phytophthora.*

Diagnosing rhododendron problems on Long Island is best accomplished by looking for the simple explanations. Remember that many more rhododendrons on Long Island perish from lack of water than from any fungus or insect injury!

Contact Cornell Cooperative Extension of Suffolk County for current recommendations for controlling insect and/or disease problems on rhododendron.

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