

ask the expert

BY BALAKRISHNA RAO

Tree dieback

On one of our properties a number of oak trees and a few conifers show various degrees of decline and dieback.

Any idea what may be the problem?

— MARYLAND

A general tree decline and dieback can often be attributed to a root disorder, root damage or a root dysfunction.

Begin your inspection by checking the base of the tree for proper root flare. If you don't see the flare, that is an indication of fill damage, because of either excess soil and/or mulch. This would require root crown excavation using a shovel. Dig the soil near the base of trunk and gently tap the bark. If it sounds hollow or if you find any evidence of a whitish fungal mycelial growth (rhizomorph), this indicates *Armillaria* root rot. In conifers, look for a whitish fungal mycelial rhizomorph while performing root crown excavation. Whitish mycelial growth suggests *Armillaria* root rot caused by *Armillaria* sp.

If you have many trees to examine, consider using compressed air or high-pressure water to excavate.

In addition to a white mat of fungal mycelium under the bark or in the root collar, the infected tree's foliage will discolor and drop. As a first sign of disease, infected conifers will often exude resin from their roots and base. As the fungus matures, it produces clusters of honey-colored mushrooms at the tree's base. These mushrooms are not fused, but grow in a clump and have a characteristic ring on the stem below the cap. The cap is brownish at the top and produces a whitish spore at the bottom.

The shoestring mycelial rhizomorph

may extend about 4 ft. to 5 ft. high on trunks of trees. By that time, the tree usually dies because of restricted water and nutrient translocation.

Armillaria sp. can enter the tree through fungal spores, rhizomorphs or by root graft. Once inside, it can cause rot or decay of roots eventually killing the tree. Later, rhizomorph grows out into the soil from infected plant issues.

To manage *Armillaria* root rot, detect the presence of infection as evidenced by the whitish rhizomorph. If a large portion of the trunk is infected, remove the tree promptly to avoid hazard. If a small area is infected, barktrace the infected tissue and let it air-dry. Remove excess soil and put it back before cold winter temperature occurs. There are no fungicides to manage this.

This disease is associated with stress. Reduce exposure to extremes in moisture and/or temperature. Often, excess moisture around the base of the trunk is a major predisposing factor. Keep the mulch cover 2-in. to 3-in. thick and about six inches away from the trunk to avoid damaging sensitive bark and cambium at the root collar area. Provide proper watering, mulching, fertilizing and pest management.

How does Mach 2 stack up?

How does Mach 2 perform compared to Merit for grub control?

— MICHIGAN

Mach 2 from Rohmid Corp. is a molt-accelerating compound that speeds up a grub's molting process (see "Insecticides a la mode" story on page 66). Ingestion causes immature insects to undergo a pre-

mature molt and die. It affects the natural metamorphosis, and uses halofenozide as its active ingredient. It controls all white grubs, cutworms, sod webworms and armyworms and comes in spray, granular and fertilizer formulations for use on turfgrass. Rohmid claims that it will provide season-long control of grubs, and can give three to four weeks of residual control for surface feeding insects. One benefit of Mach 2 is that there is no need for immediate watering.

Because of its preventive and curative activity, it can be applied early like Merit, or later as a rescue curative treatment.

Mach 2 performed well for controlling sold webworm and black cutworm, performing equal to Sevin in university trials. Mach 2 applied in May before eggs are laid, or in June when eggs are laid, provided 100% control of European chafer in university trials. University of Nebraska scientists found that Mach 2 resulted in 79% control as compared to 58% control for Merit of European chafer when applied against second instar grubs. At this stage, grubs feed actively and can cause extensive damage. In this situation, consider using other insecticides such as Dylox or Oftanol.

Mach 2 is not known to be affected by pH hydrolysis or enhanced bacterial degradation. Merit and Mach 2 provide similar results for all white grub and turfgrass insect management. Read and follow label specifications for best results.

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SEND YOUR QUESTIONS TO: "Ask the Expert" Landscape Management; 7500 Old Oak Blvd.; Cleveland, OH 44130, or email: sgibson@advanstar.com. Please allow two to three months for an answer to appear.

