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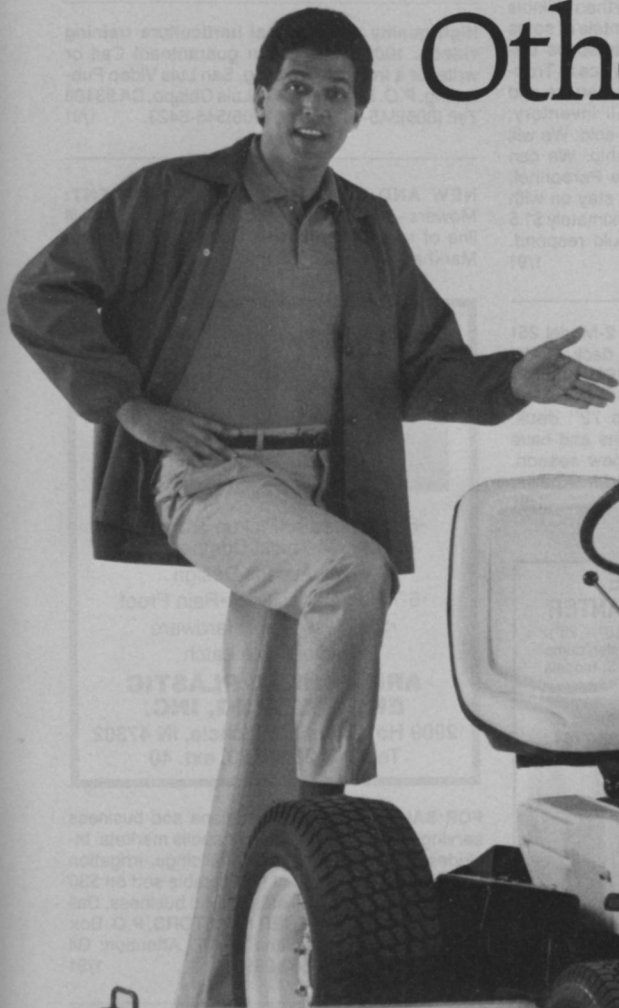
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PROBLEM MANAGEMENT

Preventing root rot

Problem: What can be done to prevent or cure oak root rot? (California)

Solution: I believe you are referring to oak root rot, known as "shoestring" root rot caused by *Armillaria* sp. This fungal disease is reportedly severe in California on oaks on properties maintained with heavy irrigation and soil compaction. This disease is associated with stressed and weakened trees in compacted soils receiving heavy irrigation.

Oaks in your area are also susceptible to root rot diseases caused by *Phytophthora* sp. Since you mentioned oak root rot, we will discuss the shoestring root rot caused by *Armillaria* sp.

Affected trees may show various degrees of decline with thin crown and twig dieback. To detect the problem, tap the trunk with a soft mallet. If you hear a hollow sound indicating the bark has pulled away from the wood, bark trace the area and look for fungal bodies or mycelial structures called "rhizomorphs." In addition to this, at the base of affected trees, honey-colored mushrooms can be found as the disease progresses.

There is not much that can be done to save the tree. If the rhizomorph has not spread too far, bark trace and open up the diseased area near the ground level to air dry, and put the soil back prior to winter. This might be helpful in promoting callus growth. This disease is soil-borne, meaning the fungus that causes it is in the soil.

Provide proper fertilizing, watering and pest management as needed to help improve the plant's vitality. Minimize the stress factor(s), monitor watering practices, and aerify the compacted soil where feasible.

The cause of oak decline

Problem: A large number of oaks show various stages of decline and some are now dying. Is there some major disease that is killing these trees? What can be done to save them? (Michigan)

Solution: Although we had plenty of rain last year, we are experiencing a significant number of landscape plants dying. In some situations, plants with shallow root systems can be severely injured due to excess moisture around the root system.

Yet many dying trees, such as established oaks, may be the victims of stress from the 1988 drought and subsequent attack from secondary pests and disease. We observed a large number of declining oaks, maples and elms last summer that we attributed to these factors.

In many areas, the effect of drought was severe enough to cause stress and predispose oaks to borers, particularly two-lined chestnut borer, cankers such as hypoxylon canker, twig blight caused by *Diplodia*, and *Armillaria* root rot (shoestring root rot). These insect and disease agents gradually establish on stressed and weakened trees.

Although trees look very large, most of the functional roots are in the top 18 inches of the soil. The absorbing roots, which are the fine hairlike roots, are near the surface and can be injured or killed during

drought. This affects water and nutrient uptake to the crown, causing dieback. These weakened trees will be predisposed to insect and disease activity two to three years after injury, which contributes to further injury and even death. That is what you may be experiencing at this time.

Other factors such as tree age in relation to site index, soil disturbance and root injury, and species of oak (generally red oaks are more susceptible to drought stress, although it is not limited to this species) can contribute to the dying of drought stressed trees.

In some situations, oak decline has the appearance of oak wilt disease. Oak wilt symptoms are usually severe during summer with premature defoliation of leaves with various degrees of discoloration. Defoliation is usually severe at the top of the crown. A brownish discoloration can be found in the vascular tissue of branches. For positive confirmation, a laboratory culturing of the wilt-causing fungi is needed. Generally, oak wilt occurs in a small number of plants at random places, like the problem of dying associated with drought.

Symptoms of oak decline and mortality due to drought usually peak in late summer. The mortality affects a number of plants in large areas. As compared to oak wilt disease, the drought stressed plant will have a sparse crown with small leaves and twig dieback, which will lead to death in future years.

Provide selective pruning, proper watering, fertilizing, mulching and pest management as needed to help improve plant vitality. These plant health care practices will help the drought-stressed trees.

Preventing poison ivy spread

Problem: Can poison ivy be spread by allowing a part of the body that is not affected to come in contact with one that is infected? Also, can consuming poison ivy leaves cause the mouth and digestive system to become infected? (Michigan)

Solution: According to the regional Poison Control Center in Akron, Ohio, "poison ivy cannot be spread by allowing a part of the body that is not affected to come in contact with one one that is affected—unless the oil from the plant is present on the skin and is transferred. If accidentally contacted, affected body parts should be thoroughly washed with soap and water. The oozing from blisters on skin will not spread the problem to unaffected areas. Ingestion of the foliage can cause vomiting and itching internally."

LM



Balakrishna Rao is Manager of Technical Resources for the Davey Tree Co., Kent, Ohio.

Questions should be mailed to Problem Management, LANDSCAPE MANAGEMENT, 7500 Old Oak Boulevard, Cleveland, OH 44130. Please allow 2-3 months for an answer to appear in the magazine.

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