

ask the expert

BY BALAKRISHNA RAO

Mysterious oak blight

What is the blight disease on oak trees in northern California caused by and how do you manage it?

— CA/OH

I've heard about a serious problem concerning oaks in California, but no one knows much about it yet. It's referred to as "sudden oak death syndrome," and it has killed thousands of central California coastal oak trees over the past five years. A University of California scientist reported that the causal agent is a fungus called *Phytophthora* sp., closely related to the one that caused the Irish Potato Famine.

Reportedly, this fungus attacks the bark of tan oak, black oak and coast live oak. Researchers at UC-Davis feel the fungus is a threat to healthy oak trees from Santa Barbara to southern Oregon. Over the last five years, it has killed trees from Big Sur to Napa, Sonoma and Solana Counties. Santa Cruz and Marin have also been hit hard.

This fungus is a water mold that produces microscopic, two-tailed swimming spores called zoospores. These spores can migrate in water but its mode of spread is not understood yet. It's reportedly related to the modern death of Portox ford cedar trees in northern California and southern Oregon, eucalyptus forests in Australia and oak forests in Mexico, Spain and Portugal.

Researchers from the University of California at Berkeley say the first sign of this fungal attack is seeping or bleeding cankers. The disease dissolves the bark and enters the wood. Later, bark beetles bore into the tree, sometimes killing it within a month.

Researchers and extension specialists are asking the public to help reduce the spread

of the disease by not using infected trees from the problem area for firewood. Instead, they should contact the cooperative extension office so the infected plants can be properly disposed. People are also being asked to clean vehicle tires and shoes that have come in contact with the area.

Drought or beetle damage?

We experienced severe drought conditions in 1999 and saw many dead or dying plants as a result of the drought or, in some cases, bark beetles. How can you figure out whether damage has been caused by bark beetles or drought?

— NY

Most problems caused by boring insects occur during the year of a drought and the following year. During these periods, monitor the drought sensitive or already affected plants. Look for sawdust or sap.

All bark beetles are in the Scolytidae family. True bark or engraver beetles feed between bark and hardwood (cambium region), and ambrosia or timber beetles bore into the heartwood. The latter feed on fungi which grow in the galleries created by ambrosia beetles.

Adult true bark beetles tend to attack stressed trees. Smaller elm bark beetles and native elm bark beetles can transmit Dutch elm disease. Other beetles can attack weakened trees and may degrade timber value.

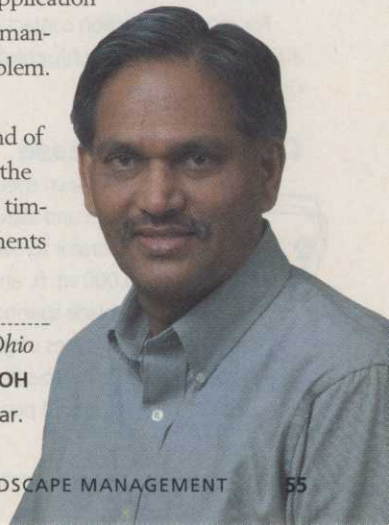
Adult bark beetles are about 2- to 8-mm long, reddish-brown to black, and shiny. The head of most species is bent downward. They make tiny holes in the bark to enter and make galleries. Sawdust or sap flow on the trunk or branch is a good indication of

beetle infestation. Drought-affected plants have early fall coloration, discolored leaves, and wilting, and turn green to yellow to brown and defoliate prematurely. Depending upon the extent of drought, plants produce dieback and, in some cases, die.

Female beetles make galleries in the cambium layer and lay eggs. Larvae hatch and chew outward at right angles to the parent gallery.

Reports show that during drought stress years, plants such as pine, spruce, elm, basswood, ash, redbud, serviceberry, dogwood, cherry, purple sandcherry, crabapple, hickory, willow, arborvitae, and *chamaecyparis* are susceptible to bark beetle attack. Affected plants show wilting and severe foliar discoloration. There are small holes (1 to 8 mm) in branches or the stem's bark. Galleries appear under the bark with small "C"-shaped legless larvae with tan heads. Stressed trees show these symptoms sooner than healthier plants.

The best way to manage a bark beetle attack is to keep plants healthy with proper cultural practices. This includes mulching, watering, fertilizing and pest management. Periodically, scout for bark beetles in drought-stressed trees. Infested trees should be promptly removed, and remaining healthy trees should be protected through insecticide treatment options. An insecticide application should help manage the problem. Depending upon the kind of bark beetle, the number and timing of treatments may vary.



Manager of Research and Technical Development for the Davey Tree Expert Co., Kent, Ohio

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.