

BACKGROUND

Declining oak species have been found in urban landscapes and open spaces throughout the coast range of California. A new, yet undescribed fungal species, *Geosmithia* sp. #41

(Kolarik in press), was recovered from symptomatic plant tissues in association with the western oak bark beetle (WOBB) *Pseudopityophthorus pubipennis* (Coleoptera: Curculionidae: Scolytinae). WOBB appears to attack trees weakened by drought, disease, injuries, or other factors that may stress the tree. Pathogenicity tests confirmed *Geosmithia* sp. causing disease on coast live oak.



Fig. 1. Branch die back symptoms of foamy bark canker disease.

THE BEETLE

Western oak bark beetle is a small beetle that burrows through the bark, excavating shallow tunnels between the bark and cambium across the grain of the wood. Female beetles lay their eggs in the tunnels; the developing larvae tunnel at right angles to these, but mostly within the phloem (inner bark) close to the surface (Costello et al. 2012).



Fig. 2. Western oak bark beetle forming a gallery in the bark.

MANAGEMENT

Control experiments specific to foamy bark canker have not been conducted. As such, there are no control measures for this disease that can be officially recommended except for general cultural practices that improve tree vigor. However, the following general recommendations for common bark beetles can be found at the UC-IPM web site: <http://ipm.ucanr.edu/PMG/PESTNOTES/pn7421.html>.

- Irrigate when appropriate around the canopy during drought months. Avoid the frequent, shallow type of watering that is often used for lawns. A general recommendation is to irrigate trees infrequently, such as twice a month during drought periods. However, a sufficient amount of water must be used so that the water penetrates deeply into the soil (about 1 foot below the surface).
- Properly prune infested limbs, and remove and properly dispose of dying trees so that beetles do not emerge and attack other nearby trees.
- The following suggestions are based on UC-IPM recommendations for common bark beetles. If the infestation is at the beginning stage, some of pyrethroid pesticides could be sprayed on the tree trunk. Heavily infested trees or trees that are already dead or dying due to foamy bark canker cannot be saved with pesticide treatments and should be removed.



Fig. 3. Typical Foamy Bark Canker Infested Tree.

SIGNS+SYMPTOMS

Symptoms occurring on the trunk and primary branches include wet discoloration seeping through WOBB entry holes.



Fig. 4. Symptoms of foamy bark canker.

Removal of the outer bark reveals phloem necrosis surrounding the entry hole.

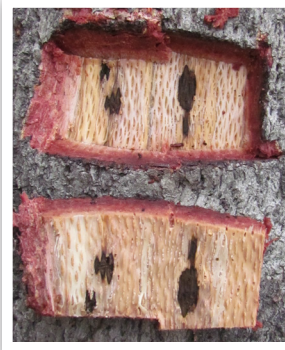


Fig. 5. Beetle galleries between the bark and cambium.



Fig. 6. Cinnamon colored gum, followed by a creamy, foamy sap.

At the initial phase of attack, a reddish sap may ooze from the entry hole, followed by a cream-colored foamy liquid running as far as 2 feet down the trunk. Multiple entry holes may be observed on each tree.



Fig. 7. Western Oak Bark Beetle entry hole.

Note: Symptoms may be confused with Fusarium Dieback/Polyphagous and Kuroshio Shot Hole Borers symptoms. The entry holes formed by WOBB are smaller than PSHB entry holes.