

# Laurel Wilt Disease: a new threat to California avocado industry

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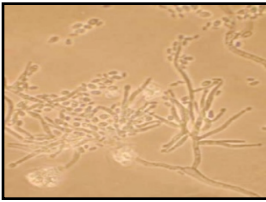


Fig 1. The pathogen: an Ophiostroma-like fungus



Fig 2. Redbay Ambrosia beetle (*Xyleborus glabratus*) (2mm)

According to recent reports from Florida, laurel wilt disease (LW) is spreading quickly throughout southeastern United States. The disease affects the vascular tissue of plants in the Laurel family (Lauraceae), of which avocado is a member. Members that exist in California include Avocado (*Persea americana*), California native bay laurel (*Umbellularia californica*), and Camphor (*Cinnamomum camphora*) are susceptible.

The causal agent of laurel wilt disease is *Raffaelea lauricola*. This newly described fungus is vectored by a non-native insect of Asian origin -- the redbay ambrosia beetle (RAB) (*Xyleborus glabratus*). The beetle, which is very small, bores into the wood of the tree and inoculates the host wood with *R. lauricola* spores that germinate, colonize the tissue, boring into the xylem. As a result, movement of water and nutrients are blocked. Symptoms include branch dieback, and eventually tree death. In recent reports from various Florida counties, this fungus has affected not only redbay, but also silk bay, swampbay, camphor, sassafras, and backyard avocado trees.

RAB was trapped in Miami-Dade County last month, home to Florida's avocado industry and now poses a major threat to the state's commercial production. It was just confirmed that the trapped beetle was carrying the disease. Recently the disease was detected in Mississippi, much faster than predicted.

This disease complex RAB/LW poses a serious threat to the California avocado industry. This is especially true in light of the lack of knowledge regarding the disease and disease management strategies. It has been shown that the native California bay laurel is susceptible to this disease. Thus, it is highly probable that the disease will establish in California if the beetle spreads into the western United States.

In preliminary studies conducted in Florida with potted avocado plants, it appears that there is a difference in cultivar response, with Mexican race types ('Bacon') being less susceptible than West Indian (e.g. 'Simmonds', 'Russel'l, 'Waldin'). These preliminary results indicate that 'Hass' is intermediate in susceptibility to these two races of avocado.

(Riggins et al. 2010; Mayfield et al. 2008; Fraedrich et al. 2008; Kubono and Ito, 2002).



Fig 3. Laurel wilt disease on Redbay (*Persea borbonia*)



Fig 4. Laurel wilt caused by *Raffaelea lauricola* on backyard Avocado tree in Florida



Fig 5. Laurel wilt symptom on Avocado sapwood