

LAUREL WILT

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What is Laurel Wilt?

Laurel wilt is a disease affecting trees and shrubs in the laurel family (*Lauraceae*). The disease is caused by the fungal pathogen, *Raffaelea lauricola*, and transmitted by the wood-boring redbay ambrosia beetle, *Xyleborus glabratus*. Both the pathogen and insect vector were introduced to the United States on imported wood packing materials from Asia. Redbay ambrosia beetles bore inside the wood, lay their eggs, and create tunnels (or galleries) spreading the fungus throughout the tree. The beetles then use the fungus as a food source. The fungus eventually clogs the water-conducting cells of an affected tree, causing it to wilt and eventually starve to death. As of 2021, the disease has been detected in several counties in Tennessee. Native trees affected include sassafras (*Sassafras albidum*) and northern spicebush (*Lindera benzoin*). Ornamental and landscape trees in the *Lauraceae* family may also be impacted.

Identification

In the early stages of laurel wilt, trees may exhibit discolored, drooping leaves. In deciduous trees native to Tennessee, leaves will soon fall from the



Figure 1. Laurel wilt external symptoms with discolored, wilted leaves.

tree, leaving bare branches. In contrast, evergreen members of the *Lauraceae* family may hold reddish or brown leaves for many months. Sassafras trees that survive the initial infection may flush sparse, stunted leaves the following spring. Removal of bark from wilted trees will reveal a brown to black discoloration (Figure 2) in the sapwood which runs in streaks parallel to the wood grain. The extent of this discoloration will vary based on how long the tree has been infected.

Initial attacks from redbay ambrosia beetles are very difficult to detect. The beetles themselves are very small (about 2mm long), and the holes bored into tree stems and trunks are of similar size. However, after the tree is inoculated and starts to wilt, the beetles will begin to attack in greater numbers and small tubes of compacted sawdust may protrude from the boreholes. In Tennessee, a limited number of redbay ambrosia beetles have been reported. However, survey results in Kentucky have indicated a large number of beetles collected across multiple, different sites.



Figure 2. Internal vascular discoloration on sassafras.

Management Strategies and What You Can Do

Avoid moving firewood, tree trimming, or mulch from sassafras (and other *Lauraceae* host species) out of counties where laurel wilt is known to occur. Long distance transportation of firewood should be avoided in general. Infected trees could be cut down and chipped but limited information is available for sassafras trees. Resulting wood chips should be burned, if feasible. Alternatively, chips may be covered to prevent the beetles from spreading. Debris from diseased trees should always be disposed of on-site, rather than transported elsewhere.



Figure 3 and 4. Discoloration of the upper canopy is rapid (top), resulting in complete defoliation and eventual tree death (bottom).

Current Disease Range and Distribution

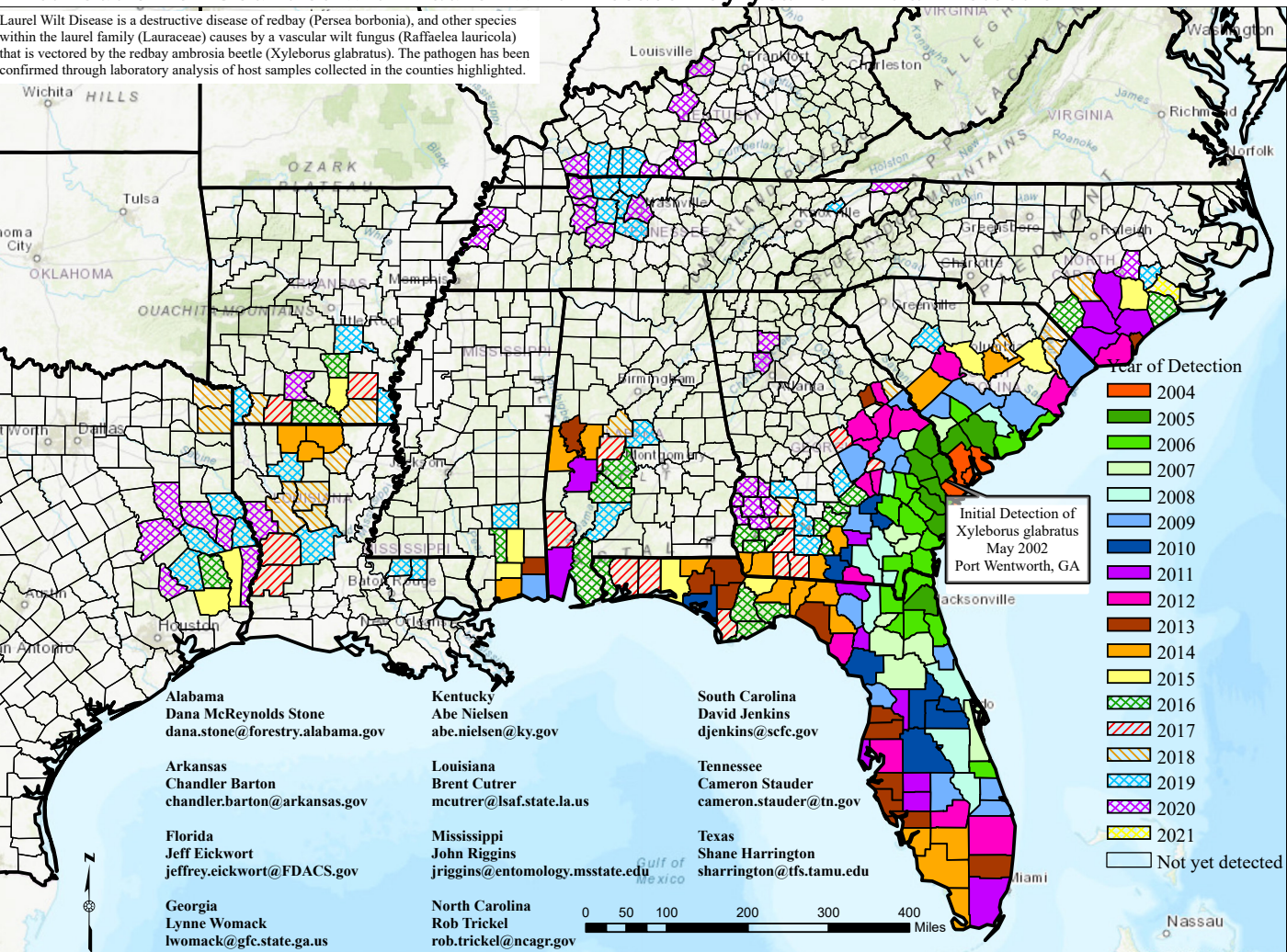
Confirmation of laurel wilt is typically done by laboratory isolation of the *R. lauricola* fungus from fresh wood samples, collected from hosts exhibiting the dark, sapwood discoloration described previously. Contact your county Extension agent if you suspect laurel wilt is impacting your trees, especially if you live outside existing quarantine zones.

Although both the beetle and the pathogen are not native to our region, laurel wilt has only been reported in the United States. Currently, the disease is found in most southeastern states.

Distribution of Counties with Laurel Wilt Disease* by year of Initial Detection

March 10, 2021

Laurel Wilt Disease is a destructive disease of redbay (*Persea borbonia*), and other species within the laurel family (*Lauraceae*) caused by a vascular wilt fungus (*Raffaelea lauricola*) that is vectored by the redbay ambrosia beetle (*Xyleborus glabratus*). The pathogen has been confirmed through laboratory analysis of host samples collected in the counties highlighted.





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