



# Laurel Wilt Disease

*A Threat to All Species in the Laurel Family*

Forestry Topic 56

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## What is Laurel Wilt Disease?

Laurel wilt is caused by the fungal pathogen *Raffaelea lauricola*, which is carried by the redbay ambrosia beetle (*Xyleborus glabratus*). Both the beetle and the fungus are native to Asia and were first detected in North America in 2002, near Savannah, Georgia. Since then, laurel wilt has spread north to Kentucky and west to Texas. In June of 2021, symptoms were observed on sassafras (*Sassafras albidum*) in Scott County, Virginia, and the disease was later confirmed.

Female redbay ambrosia beetles enter suitable host trees, carrying fungal spores in their mouthparts. The fungus colonizes water-conducting cells in the plant tissue, causing a reaction that disrupts water movement within the tree. As the tree declines, it is attacked by more redbay ambrosia beetles and other species of ambrosia beetles.

## Hosts

All species in the laurel family (Lauraceae) native to North America are susceptible to laurel wilt. In Virginia, these are primarily redbay (*Persea borbonia*), sassafras (*Sassafras albidum*), and spicebush (*Lindera benzoin*). Redbay is a small, broad-leaved evergreen tree found in coastal southeastern Virginia. Sassafras is a small to medium-sized deciduous tree, and spicebush is a multi-stemmed, deciduous shrub; both are widely distributed throughout the state. Additional species in the laurel family include swamp bay, silk bay, pondberry, and pondspice.

## Signs and Symptoms



*Dead and declining sassafras trees infected with laurel wilt disease*

An early symptom of laurel wilt disease is discolored, wilting foliage. Initially, just a few branches may be impacted, but leaf browning eventually occurs throughout the entire tree. On deciduous trees, such as sassafras, leaves fall off the tree shortly after turning brown. On evergreen species, such as redbay, brown and wilted foliage is retained for months after infection. Laurel wilt causes rapid mortality, often within one growing season. Should a tree persist, it will have stunted foliage the following year and succumb to the disease soon after.

Peeling back the bark of an infected tree reveals dark streaking of the vascular tissue in the direction of the wood grain. Redbay ambrosia beetles are very small and difficult to

find, but their sawdust frass tubes, resembling toothpicks, may be seen at beetle entrance holes. Note that sawdust frass tubes are also produced by other species of ambrosia beetles and by themselves are not diagnostic for laurel wilt.

## Management

No large-scale management tactics are currently available for laurel wilt disease. For high-value specimen trees, an injection with the fungicide propiconazole can preventatively guard against laurel wilt, but this treatment will only be beneficial for healthy trees or shrubs. If possible, remove and destroy infested trees and shrubs. Chipping wood into one-inch pieces can help to reduce the spread of redbay ambrosia beetles. Burning or covering woody material impacted by laurel wilt prevents ambrosia beetles from emerging and flying to new hosts. Firewood from infested trees should never be moved or transported off site.

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*Dead redbay trees retaining brown foliage*



*Sawdust frass "toothpicks"*



*Vascular streaking on an infested sassafras*

 **Virginia Department of Forestry**  
900 Natural Resources Drive, Suite 800  
Charlottesville, Virginia 22903  
Phone: (434) 977-6555  
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