Pest Alert

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State and Private Forestry
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Laurel Wilt

Laurel wilt is a disease of woody plants in the laurel family (Lauraceae). Hundreds of millions of redbay (*Persea borbonia*) trees have been killed by laurel wilt in the southeastern Atlantic Coastal Plain region of the United States (US). The disease has also killed large numbers of sassafras (*Sassafras albidum*) trees in forests and landscapes, and avocado (*Persea americana*) trees in commercial production. As of August 2025, laurel wilt was known to occur from Kentucky and Virginia south to Texas and Florida, and as far north as New York. Laurel wilt is expected to continue spreading through sassafras in the eastern US, and is a potential threat to California bay laurel (*Umbellularia californica*) in the western US and to lauraceous species elsewhere in the world.

Laurel wilt is caused by a fungus (*Harringtonia lauricola*) that is carried by an insect, the redbay ambrosia beetle (*Xyleborus glabratus*). These organisms are native to Asia, are invasive pests in North America, and can be easily transported to new areas by movement of infested wood products and firewood.

Symptoms

In early stages of laurel wilt, trees exhibit drooping, discolored leaves (**Fig. 1A**). In deciduous hosts like sassafras, leaves soon fall from the tree leaving branches bare (**Fig. 1B**). In contrast, evergreen hosts like redbay will retain reddish or brownish leaves for many months. Diseased trees typically exhibit a dark discoloration in the outer sapwood that runs with the direction of the grain (**Fig. 1C**). In sassafras, some trees may produce sparse, stunted leaves in the spring following the initial year of infection (**Fig. 2**).

Redbay ambrosia beetles (**Fig. 3**) are extremely small (~2 mm long), spend most of their life cycle inside the tree, and are not easily seen in the field. Entrance holes (<1 mm diameter) may be seen on smooth bark or on the wood surface when bark is removed. Many ambrosia beetle species produce fine, light-colored sawdust that may be seen at the bark surface, but neither sawdust nor beetle holes are signs specific to laurel wilt.

Disease Process

Spores of the laurel wilt fungus are carried in the mouthparts of the redbay ambrosia beetle. Host trees typically become infected when a female beetle lands on a stem or branch and bores into the wood. The fungal spores enter the water-conducting cells and spread through trees, causing a reaction that restricts water flow. Trees can die within a few weeks or months after infection. The redbay ambrosia beetle will attack

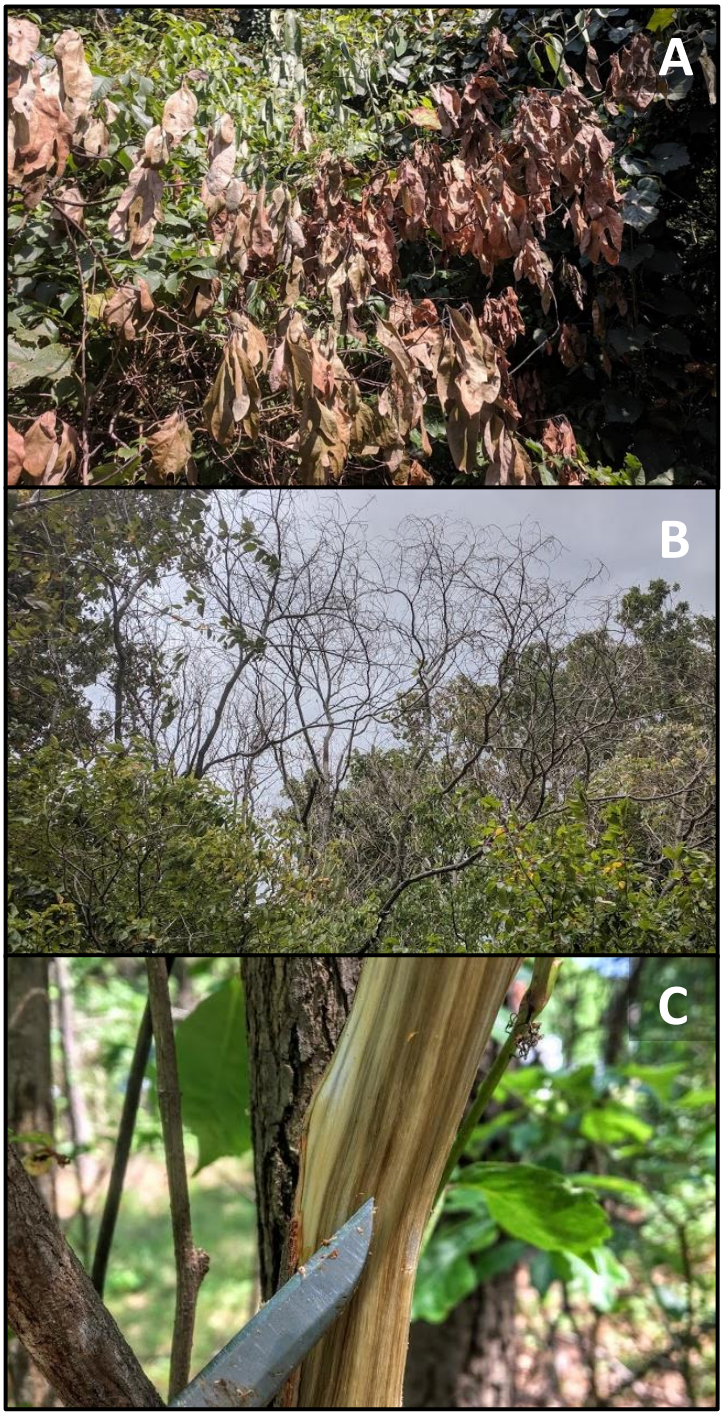

Fig. 1. Laurel wilt symptoms in sassafras. A) Drooping leaves in the early stages of the disease. B) Diseased trees that have recently dropped their leaves. C) Bark removed to show dark discoloration on the surface of the sapwood.

healthy trees, and entry by just one beetle may be sufficient to kill a tree. In sassafras, the fungus can spread readily from tree to tree through root connections; however, this mode of transmission is probably not a major factor for disease spread in redbay.

After a tree has been killed by laurel wilt, redbay ambrosia beetles and other species of ambrosia beetles will produce offspring within tunnels in the wood. Some of these other ambrosia beetle species can pick up the laurel wilt fungus when tunneling in the dead trees, but their ability to spread the disease to healthy trees in natural forests has not been documented.

Hosts

All plant species in the family Lauraceae native to North America are susceptible to the laurel wilt fungus. Field occurrence of laurel wilt has been documented in redbay, swamp bay (*Persea palustris*), silk bay (*Persea humilis*), sassafras, northern spicebush (*Lindera benzoin*), pondberry (*Lindera melissifolia*), and pondspice (*Litsea aestivalis*). Laurel wilt has been induced through artificial inoculation of additional species including California bay laurel (*Umbellularia californica*), pepperleaf sweetwood (*Licaria triandra*) and lancewood (*Nectandra coriacea*). Other lauraceous species that are not native to North America such as avocado, camphortree (*Cinnamomum camphora*) and bay laurel (*Laurus nobilis*) are also susceptible to wilt. Not all of these species are equally vulnerable to the disease nor equally attractive to the redbay ambrosia beetle. Plants that have "laurel" or "bay" in their common names but are not in the family Lauraceae, such as mountain laurel (*Kalmia latifolia*), sweetbay (*Magnolia virginiana*) and loblolly bay (*Gordonia lasianthus*), are not susceptible to laurel wilt.

Detection and Management

Confirmation of laurel wilt is typically achieved by laboratory isolation of the fungus *H. lauricola* from fresh wood samples, collected from host plants exhibiting the dark sapwood discoloration described above. Redbay ambrosia beetles may be detected or monitored using bark beetle flight traps or sticky traps baited with lures that release alpha-copaene (an attractive compound) or fresh host wood. If you suspect laurel wilt in an area where it has not been previously reported, please contact your state Department of Agriculture, state forestry agency, or cooperative extension office for assistance.

Management tactics for reducing the spread and impact of laurel wilt are limited, but may include the following:

- Do not transport dead and felled trees, firewood or other untreated woody material from laurel family species to areas where the disease does not occur. If laurel wilt is known to occur in a county, laurel family species should not be transported across county lines. Visit the Laurel Wilt Public Dashboard for a map of laurel wilt distribution by county.

Fig. 2. A sassafras tree with laurel wilt that has produced sparse, stunted leaves in the spring following the initial year of infection.

Fig. 3. A female redbay ambrosia beetle on a fingertip.

- Nursery stock in the laurel family showing signs of wilt, sapwood discoloration or ambrosia beetle attack should not be sold or transported.
- Chipping wood from infested trees may not destroy all redbay ambrosia beetles due to their extremely small size but can greatly reduce the number of beetles that survive and disperse.
- Root-flare infusion with the fungicide propiconazole to protect high-value redbay and avocado trees for approximately one year has been demonstrated in redbay and sassafras. Research on other control tactics is in progress.

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