

Extension Faculty Redbay Ambrosia Beetle-Laurel Wilt Pathogen Update

June 30, 2009

TO: Extension Agents (especially Urban and Commercial Horticulture and Commercial Agriculture Agents, Natural Resource Agents, Environmental Horticulture) and Master Gardener Coordinators.

FROM: Jonathan H. Crane, Tropical Fruit Crops Specialist.

RE: Update for UF-IFAS Extension Agents to the Redbay Ambrosia Beetle-Laurel Wilt Disease of native trees and avocados.

Currently the redbay ambrosia beetle-laurel wilt pathogen infestation has continued to spread west and south. Please find enclosed two PDF files: a) 'Laurel wilt: a threat to redbay, avocado and related trees in urban and rural landscapes' (<http://edis.ifas.ufl.edu/HS391>) and 'Redbay ambrosia beetle-laurel wilt pathogen: a potential major problem for the Florida avocado industry' (<http://edis.ifas.ufl.edu/HS1136>). In an effort to keep you updated on the situation please see below.

Update

The redbay ambrosia beetle-laurel wilt pathogen (RAB-LW) is now found in several new counties including Suwannee and Flagler Counties and is as far south as Okeechobee and Indian River Counties (Fig. 1). During March, Dr. Jorgé Peña and I met with and trained USDA-APHIS and FDACS-DPI survey personnel on how to identify avocado trees for a RAB-LW redbay and avocado survey of Palm Beach and Martin Counties. So far no new positive RAB-LW finds on avocado or redbay were found. Several samples from redbay have been taken in St. Lucie County but no word yet on the findings.

The natural spread of the redbay ambrosia beetle-laurel wilt pathogen (RAB-LW) through the natural areas has been estimated to be as high as ~34 miles per year; others estimate between 15-20 miles per year. Furthermore, the beetle is attracted to volatiles naturally emitted by living trees, severed limbs, tree stumps, and wounded (pruned) trees of avocado (*Persea americana*) and redbay (*Persea borbonia*) trees. Finally, anywhere RAB-LW has been established for more than 12-18 months there is greater than 95% mortality for redbay trees. Avocado trees are being infested in Duval, Brevard, and Indian River Counties and the status of a sample from St. Lucie County is underway.

Of continued concern is the potential for man assisted spread of the RAB-LW. The redbay ambrosia beetle reproduces in the galleries of infested hosts (e.g., redbay, sassafras, avocado) thus protecting them from predators. The developmental time of the RAB inside the galleries of the host trees from egg to adult is 7 to 8 weeks depending upon temperatures. Logs, limbs, sections of limbs (called bolts) and stumps may all be infested by the RAB-LW. Furthermore, chipping infested wood material may not destroy adults, eggs, larvae, and pupae. The time from beetle infestation of a host to tree damage or death varies with the host species, tree health, tree size, and ranges from about 7 days to about 3 months. All of this points to a number of issues with respect to the spread of this pest, including:

1. Movement of firewood and logs by entrepreneurs, residents, landscape companies, pruning companies (e.g., Asplundh) and wood-turners.
2. Movement of wood chips from infested wood (same groups plus mulch companies).
3. Movement of wood products (logs, chips) to landfills (same groups including municipal waste companies and arborists).
4. Prevention of illegal dumping of wood products (logs, brush, limbs, etc.) is needed.
5. Movement of potentially infested host trees. There needs to be a protocol designed to kill the beetle and fungus that nurseries can follow that would allow them to ship product out of an infested area.

Currently we recommend:

1. Report any suspicious redbay (and other native host trees) and avocado trees to DPI and USDA-APHIS.
2. Redbay and other host woody forest species should **not be moved** or sold as firewood, tree trimmings, BBQ smoke-wood, mulch, or wood-turning material.
3. Extreme caution should be used in moving host trees (e.g., redbay, avocado) and wood products into counties where the pest is not yet found. Insect- and disease-free containerized host trees should only be purchased from reputable nurseries, and trees showing any signs of wilt or dieback should be destroyed immediately.

What we don't know concerning control strategies

1. Which pest and disease control substances that are or could be available, safe, efficacious and economic for home owners to use with avocado trees. Propiconazole injections have been shown efficacious for control of LW on redbay and it is assumed permethrin will kill the beetle – however, these substances are not registered for homeowner use, very expensive, and in general not practical for urban/rural residents with a few avocado trees.
2. Will tarping and composting the cut wood/chips from an infested tree stop beetle emergence and laurel wilt pathogen spread? This has not been shown but probably will decrease the emergence and spread of the beetle.
3. Can the disease be transmitted by contaminated pruning equipment? This is not known, so we recommend pruning equipment be disinfested with chlorine after use.
4. What can regulatory agencies implement as soon as possible with respect to monitoring and control strategies to preclude manmade movement of RAB-LW? This is under review by DPI and USDA-APHIS.

Tentative recommended control measures for urban and rural residents

Rural and urban residents should be on the look-out for redbay and other host trees (including avocado) showing signs of rapid wilting, dieback, and insect boring, and should report this to the Department of Plant Industry (<http://www.fl-dpi.com>) and/or the Division of Forestry (<http://www.fl-dof.com/>). The local DPI office can be located through calling DPI headquarters (888-397-1517) or through their county locator website (http://www.doacs.state.fl.us/pi/plantinsp/pi_inspectordirectory/pi_insp_map.html). This will help regulatory agencies and scientists track the movement of this pest. Preliminarily, redbay

ambrosia beetle attacks of redbay appear to be highest from June through October. We can expect attack on avocado to increase during the summer as well.

The wood (i.e., limbs, trunk, stems) of door yard avocado trees should not be placed into the urban debris stream, that is, taken to the local landfill because adult and immature (eggs, larvae, pupae) RAB remain and develop in this wood and can emerge to infest more trees.

Current recommendations for urban and rural residents with infested redbay or avocado trees include: immediately cutting the tree to ground, placing all wood (or chips) on top of the stump, and covering with a tarp all the way to the ground. Perhaps the composting process can be accelerated with ingredients such as topsoil, manure, fertilizer and water. For more information on how to build compost piles visit <http://edis.ifas.ufl> or go to <http://edis.ifas.ufl.edu/pdffiles/EP/EP32300.pdf> and <http://edis.ifas.ufl.edu/pdffiles/HE/HE02600.pdf>. Ideally, the stump should be painted with glyphosate (e.g., Roundup®) or another compound to kill the roots and prevent sprouting.

Burning is not recommended because of the necessity to obtain state, county, and/or municipal burn permits and the danger of uncontrolled burning by residents.

Please contact me if you have any questions.

(c://extension/2009/handouts 2009/Extension faculty update redbay ambrosia beetle.docx)

Distribution of Counties with Laurel Wilt Disease* Symptoms, by Year of Initial Detection

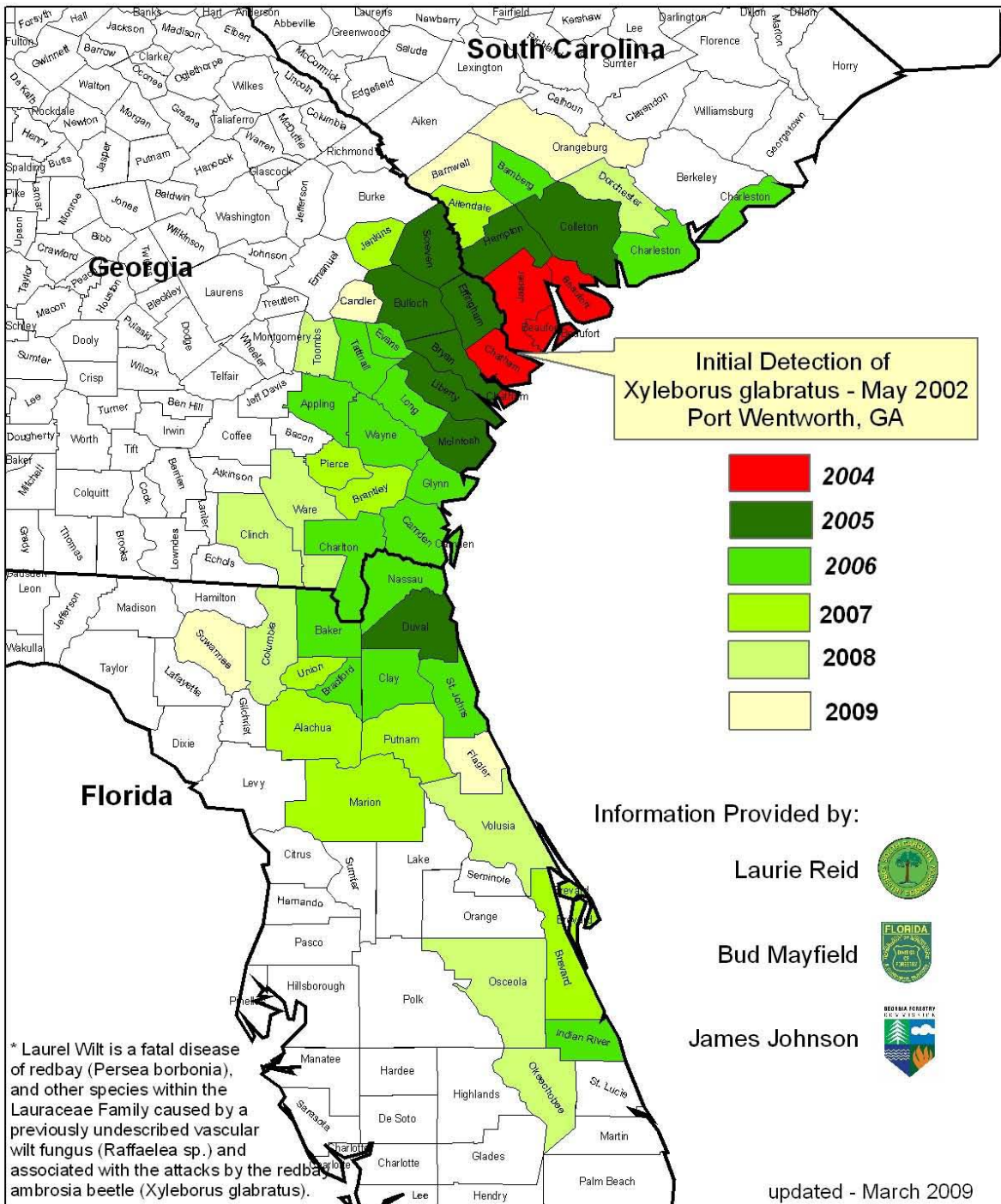


Fig. 1. Current location of positive infestations for the RAB-LW.