HS1179

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IFAS Extension

Homeowner Detection of and Recommendations for Mitigating Redbay Ambrosia Beetle – Laurel Wilt Disease on Redbay and Avocado Trees in the Home Landscape[1]

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Update on the redbay ambrosia beetle – laurel wilt disease

Currently, the redbay ambrosia beetle-laurel wilt disease infestation continues to spread west and south in Florida. Avocado trees have been reported as infested in Duval and Brevard counties. As of this writing, the redbay ambrosia beetle has been detected in Miami-Dade County and was shown to carry the laurel wilt pathogen (March 2010). More surveying, sampling and testing is in progress. Laurel wilt disease has not yet been detected in Miami-Dade County.

The natural spread of the redbay ambrosia beetle-laurel wilt disease (RAB-LW) through natural areas (national and state park lands) has been estimated to be 15–34 miles per year (Koch and Smith 2008). The rate of movement through urban areas of Florida via landscape redbay and avocado trees is unknown. Of continued concern is the potential human-assisted spread of the RAB-LW to noninfested counties through the movement of infested wood or plant material.

The redbay ambrosia beetle is attracted to volatiles naturally emitted by healthy living trees, severed limbs, and wounded (pruned) trees of avocado (*Persea americana*) and redbay (*Persea borbonia*) trees. Please see the fact sheet "Laurel Wilt: A Threat to Redbay, Avocado, and Related Trees in Urban and Rural Landscapes" at (http://edis.ifas.ufl.edu/HS391) for a list of other host tree species in the Laurel family.

The redbay ambrosia beetle bores into host trees (e.g., avocado and redbay) and forms galleries in which to reproduce. These galleries protect the immature beetles and breeding adults from predators (Fig. 1). The developmental time inside the galleries of the host trees from egg to adult is seven weeks to three months, depending upon temperatures and tree host species. Logs, limbs, sections of limbs, and stumps may all be infested by the RAB-LW. Furthermore, chipping infested wood material may

1. This document is HS1179, one of a series of the Horticultural Sciences Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date May 2010. Visit the EDIS Web Site at http://edis.ifas.ufl.edu.
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not destroy adults, eggs, larvae, and pupae. The time from initial beetle contact (boring) with a host to tree damage or death varies with the host species, tree health, and tree size. It ranges from about 21 days to about 3 months.

The spread of the beetle and the pathogen that causes the disease can be hastened and extended by:

1. Movement of infested wood, firewood, and logs by entrepreneurs, residents, landscape companies, pruning companies, and wood-turners.
2. Movement of wood chips from infested wood as mulch.
3. Movement of wood products to landfills that don't burn or bury materials.
4. Illegal dumping of wood products (logs, brush, limbs, etc.).
5. Movement of potentially infested live host trees (e.g., redbay, sassafras, and avocado).

Many different kinds (species) of ambrosia beetles and associated fungi can be found in trees. Symptoms of ambrosia beetle and vascular wilt infestations include (Fig. 2 and 3):

1. Wilting of leaves and young stems.
2. Color change in leaves from light green to dark purplish green or greenish brown.
3. Dead leaves hanging on the tree.
4. Stem and limb dieback.
5. Trunk and major limbs that show dried sap (white, crystalline, powderlike material).
6. Dark streaks in the sapwood. (Normally this sapwood should be white to yellowish with no dark staining or streaking. Remove a section of the bark to check for this symptom, which may indicate fungal infection.)
7. Small, dark holes in the sapwood indicate wood boring beetles are present.

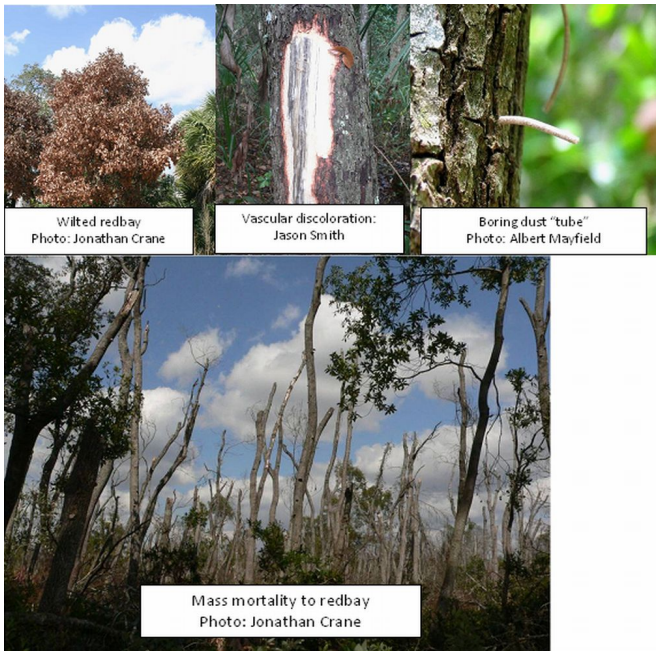

Figure 2. Leaf, wood, and bark symptoms of laurel wilt and redbay ambrosia beetle attack of redbay trees.

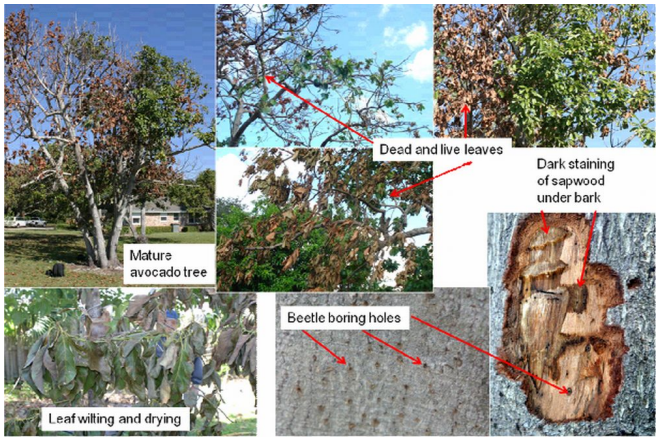

Figure 3. Symptoms of a mature avocado tree that tested positive for laurel wilt and redbay ambrosia beetle in Brevard County (Photos: Jonathan Crane).

Frequently asked question: *Are these symptoms indicative of a redbay ambrosia beetle – laurel wilt disease attack?* The answer is, not necessarily. Leaves and young stems wilting, dead leaves hanging onto the stems, and stem and limb dieback may be due to lightning strike, flooding, severe drought, and/or an infestation of one or more of the many ambrosia beetles we already have here and the fungi they carry or other diseases that would cause vascular plugging (dysfunction). However, these symptoms are suspicious for the redbay ambrosia beetle and laurel wilt disease, and the tree should be sampled to determine if the redbay ambrosia beetle and laurel wilt disease are the cause of the symptoms.

Currently, we recommend that homeowners:

1. Report any suspicious redbay, sassafras, and avocado trees to the **Division of Plant Industry at 1-888-397-1517**. These trees are all in the Laurel family. As far as is currently known, the redbay ambrosia beetle *does not* attack trees in other families like oaks, maples, mangoes, sapodilla, and citrus, nor are these species susceptible to the fungus that causes laurel wilt.

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 live 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 registered nurseries, and trees showing any signs of wilt or dieback should be destroyed immediately.

4. The issue of dead or dying tree disposal is complicated by numerous state, county, and local regulations. Current recommendations for urban and rural residents with redbay or avocado trees that are *confirmed* to be positive for the laurel wilt disease will vary, but these trees should be destroyed because of their potential as beetle habitat and the danger that they will increase the beetle population and further spread the disease. Potential options for tree disposal will vary by county and local regulations and may include: cutting the tree down and placing the wood into the urban debris stream (i.e., the wood is taken to the local landfill and destroyed or buried) or composting the tree by cutting it to ground, placing all wood (or chips) on top of the stump, and covering with a tarp all the way to the ground. However, composting is not allowed in some urban areas, so please contact your local county government for guidance. 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 your local University of Florida/IFAS Cooperative Extension Service for more information.

More information on the laurel wilt-redbay ambrosia beetle may be found at:

University of Florida/IFAS –

- http://solutionsforyourlife.ufl.edu/
- http://edis.ifas.ufl.edu
- http://trec.ifas.ufl.edu

Division of Plant Industry – http://www.doacs.state.fl.us/pi/

DPI – Laurel Wilt – http://www.doacs.state.fl.us/pi/enpp/pathology/laurel_wilt_disease.html

DPI – Save the Guac – http://www.savetheguac.com/

USDA Forest Service, Forest Health Protection, Southern Region – http://www.fs.fed.us/r8/foresthealth/laurelwilt/latest.shtml

Literature Cited

Koch, F. H. and W. D. Smith. 2008. Spatio-temporal analysis of *Xyloborus glabratus* (Coleoptera: Circulionidae: Scolytinae) invasion in eastern U.S. forests. *Environ. Entomol.* 37:442–452.

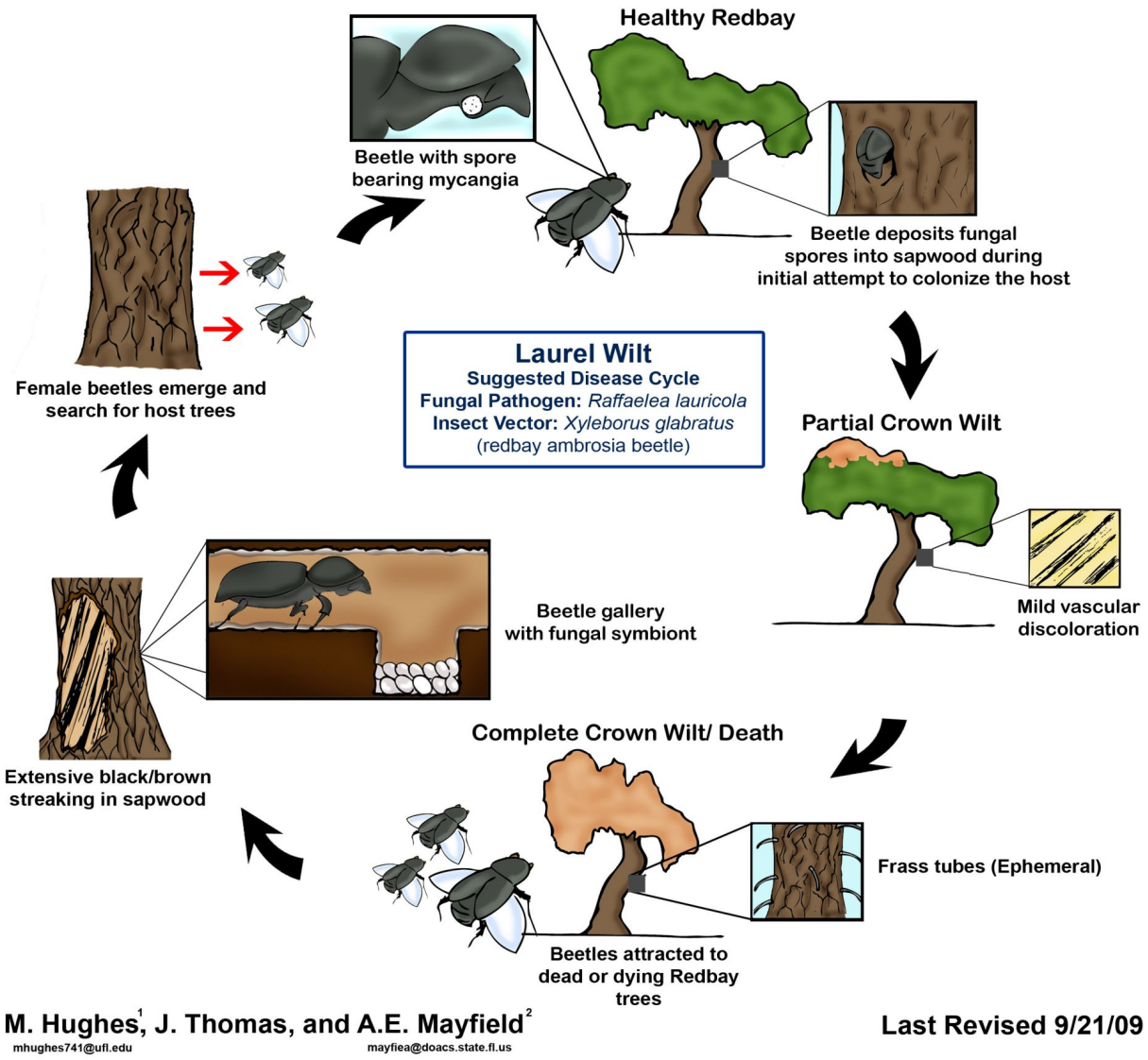

Figure 1. Proposed life cycle for laurel wilt disease (With permission: M. Hughes, J. Thomas, and A. E. Mayfield).