Homeowner handout

Homeowner Detection of and Recommendations for
Mitigating Laurel Wilt on Redbay and Avocado Trees in the Home Landscape

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Update on laurel wilt disease

Laurel wilt (LW) continues to spread west and south in Florida. Avocado trees have been reported affected in Duval, Highlands, and Brevard Counties. In February 2010 in Miami-Dade County the insect vector of LW the redbay ambrosia beetle (RAB) was trapped. However, extensive surveys of native trees and dooryard avocado trees in the adjacent urban and natural landscape did not detect symptoms of laurel wilt or result more beetles trapped until 2011. Recently several laurel wilt positive native trees (swampbay) were detected in south Miami-Dade County. Surveys are in progress to delimit the extent of this new laurel wilt outbreak in the southern end of Miami-Dade County.

The natural spread of laurel wilt disease by the redbay ambrosia beetle in natural areas (national, state and county lands) has been estimated to be 15 to 34 miles per year, but the rate of movement through urban areas of Florida via landscape native and avocado trees is unknown. Of continued concern is the potential human assisted spread 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 trees (*Persea borbonia*). 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 Lauraceae.

The redbay ambrosia beetle bores into host trees (e.g., avocado and redbay) and reproduces in the galleries it forms inside the tree thus protecting the immature beetles and adults from predators (Figure 1). The developmental time inside the galleries of the host trees from egg to adult is 7 to 3 months depending upon temperatures and tree host species. Logs, limbs, sections of limbs and stumps may all be infested by the LW-RAB. Furthermore, while chipping infested wood material has been shown to decrease the number of beetles to emerge it does not eliminate beetle emergence completely. The time from initial beetle contact (boring) with a host to tree damage or death varies with the host species, tree health, tree size, and ranges from about 21 days to about 3 months.

This beetle and the pathogen that causes the disease can be moved in addition to natural spread 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 vascular wilt include (Photograph 1 and Photograph 2):

1. Leaves and young stems wilting.
2. Leaf color changing from light green to dark purplish-green, bluish-green to greenish-brown.
3. Dead leaves hanging on the tree.
4. Stem and limb dieback.
5. Inspection of the trunk and major limbs may show dried sap (white, crystalline powder-like material). In any case, remove the bark down to the sapwood and look for dark streaking. Dark streaks in the sapwood may indicate fungal infection. Normally this sapwood should be white to yellowish with no dark staining or streaking. In addition, small, dark holes in the sapwood indicate wood boring beetles are present.

Frequently asked question: *Are these symptoms indicative of only– laurel wilt?* The answer is not necessarily, in that leaves and young stems wilting, dead leaves hanging onto the stems, and stem and limb dieback may be due to lightning strike, flooding (root rot), 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 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. The redbay ambrosia beetle does not attack trees in other families like oaks, maples, mangos, sapodilla, and citrus.
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 tested for laurel wilt.
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 habitat for producing more beetles.

Potential options for tree disposal will vary by county and local regulations and may include but not be limited to: cutting the tree down and placing the wood into the urban debris stream, that is, taken to the local landfill and destroyed or buried or; composting the tree by cutting the tree to ground, placing all wood (or chips) on top of the stump, constructing a compost pile, 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.

5. **Chemical control of laurel wilt for redbay landscape trees. Certain high-value redbay trees** can be treated for prevention of laurel wilt by use of systemic fungicides. Propiconazole **(trade name Alamo®) is currently being used with some success to protect high-value** landscape trees. In general, the process involves mass diffusion of diluted fungicide using passive uptake. In some cases, microinjectors are being used. Research has shown that protection lasts for up to 2 years at most. There are some companies and arborists that offer a fungicide service (treatment) to redbay trees. Please be sure they are using the correct product and are certified and licensed and have insurance prior to hiring them.
6. **Chemical control of laurel wilt for avocado trees in the landscape**. At present the fungicide Tilt® (propiconazole) has been approved for use as a bark directed spray mixed with 2% Pentra-Bark for control of laurel wilt in avocado trees. However we do not recommend its use at this time because not enough is known about its efficacy, potential toxicity to the tree, and how long the treatment lasts. Furthermore, if Tilt® plus Pentra-Bark is used, the mixture must be applied before the tree is infested with the disease and it has been shown to only work on trees 6-7 years old or less. However, this material is expensive and not readily available to home owners. People interested in treating their trees should contact a certified and licensed (including pesticide licensed) arborist for details on applications and costs of applying this material. Read and follow the label instructions for details and safe handling. Applicators must have the container label and indemnified labels in their possession to be legal to apply this product.
7. **Chemical control of the redbay ambrosia beetle on native and avocado trees is not recommended** at this time because (a) by the time tree wilting occurs the beetle has already infested the tree with the laurel wilt pathogen and (b) insecticide activity does not last for very long and (c) the insecticides has to contact the beetle in order to work and knowing if and when the beetle is present on your property is not currently possible.

PLEASE CONTACT YOUR LOCAL UNIVERSITY OF FLORIDA/IFAS Cooperative Extension Service for more information (http://solutionsforyourlife.ufl.edu/map/index.html)
and
FDACS Division of Plant Industry at
http://www.freshfromflorida.com/pi/enpp/pathology/laurel_wilt_disease.html

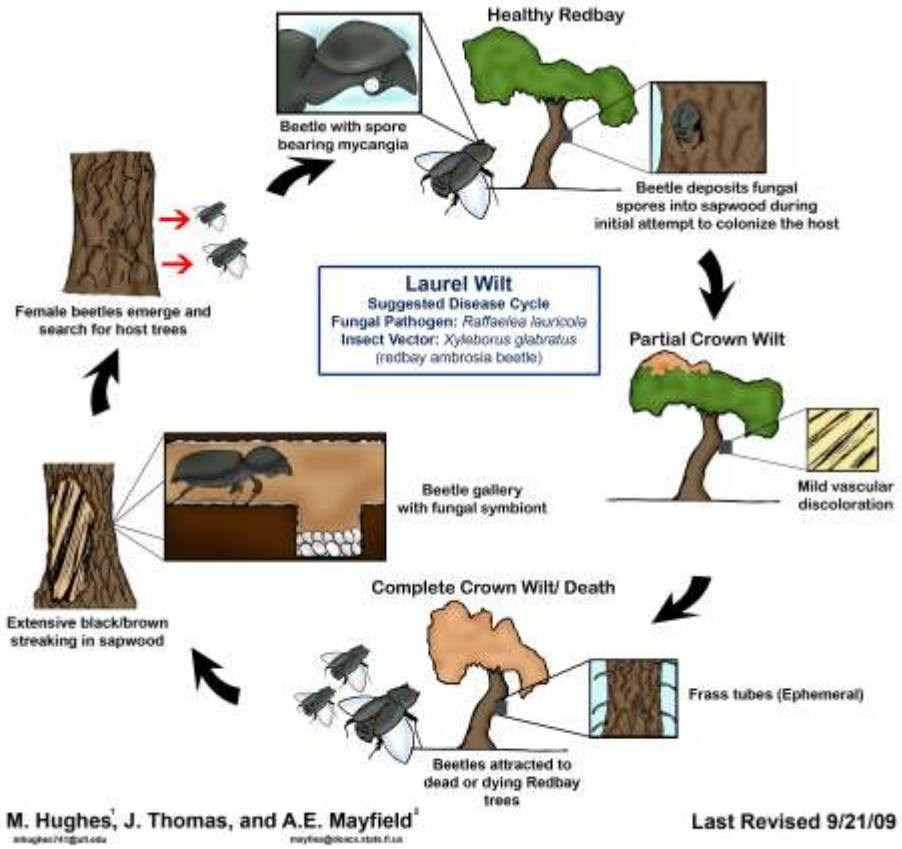

Figure 1. Proposed life-cycle for laurel wilt disease (With permission: Hughes, M., J. Thomas, and A.E. Mayfield).

Photograph 1. Leaf, wood, and bark symptoms of laurel wilt and redbay ambrosia beetle attack of redbay trees.

Photograph 2. Symptoms of a mature avocado tree that tested positive for laurel wilt and redbay ambrosia beetle in Brevard County.

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/

- http://www.freshfromflorida.com/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

(c://ext/handouts/2011/RAB/homeowner recs RAB-LW 2-23-11.docx)