

## Homeowner handout

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

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#### Update on the redbay ambrosia beetle – laurel wilt disease

Currently the redbay ambrosia beetle-laurel wilt disease infestation has continued to spread west and south in Florida. Avocado trees have been reported as infested in Duval and Brevard Counties. Although one test for laurel wilt on avocado was positive in Homestead, efforts to detect and confirm the presence of laurel wilt disease in additional samples have been negative. As of this writing the red bay ambrosia beetle has not been detected in Miami Dade County. More sampling and testing is in progress.

The natural spread of the redbay ambrosia beetle-laurel wilt disease (RAB-LW) through the natural areas (national and state park lands) has been estimated to be 15 to 34 miles per year. 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 non-infested counties through the movement of infested wood or plant material.

The redbay ambrosia beetle is attracted to volatiles naturally emitted by living trees, severed limbs, recent tree stumps, 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 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. The developmental time inside the galleries of the host trees from egg to adult is 7 to 8 weeks 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 not destroy adults, eggs, larvae, and pupae. The time from beetle infestation (boring) of 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 species of ambrosia beetles and associated fungi can be found in trees. Symptoms of an ambrosia beetle and vascular wilt infestations include (see pictures on the last page):

1. Leaf and young stem wilting.
2. Leaf color changing from light green to dark green, 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.

Common question: *Are these symptoms indicative of a redbay ambrosia beetle – laurel wilt disease attack?* The answer is no, leaf and young stem wilting, dead leaves hanging onto the stems, and stem and limb dieback may be due to lightning strike, phytophthora root rot (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 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 homeowners:

1. Report any suspicious redbay, sassafras, and avocado trees to the **Division of Plant Industry at 1-888-397-1517**.
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. Current recommendations for urban and rural residents with redbay or avocado that are confirmed to be positive for the laurel wilt disease include: 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, 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.edu/pdffiles/EP/EP32300.pdf> or go to <http://edis.ifas.ufl.edu/pdffiles/HE/HE02600.pdf> and <http://edis.ifas.ufl.edu/pdffiles/HE/HE02600.pdf>. 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.

## Tree-via

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### **General Facts About Trees:**

- Trees keep our air supply fresh by absorbing carbon dioxide and producing oxygen.
- In one year, an acre of trees can absorb much carbon as is produced by a car driven up to 8700 miles.
- Trees provide shade and shelter, reducing early heating and cooling costs by 2.1 billion dollars.
- Trees lower air temperature by evaporating water in their leaves.
- The average tree in a metropolitan area survives only about eight years!
- A tree does not reach its most productive stage of carbon storage for about ten years.
- Trees cut down noise pollution by acting as sound barriers.
- Tree roots stabilize the soil and prevent erosion.
- Trees improve water quality by slowing and filtering rain water as well as protecting aquifers and watersheds.
- Trees provide protection from downward fall of rain, sleet, and hail as well as reduce storm runoff and the possibility of flooding.
- Trees provide food and shelter for wildlife.
- Trees located along streets act as a glare and reflection control.
- The death of one 70-year-old tree would return over three tons of carbon to the atmosphere.

### **Tree Biology**

- Trees are the longest living organisms on earth.
- Trees and other plants make their food through a process called photosynthesis.
- The inside of a tree is made of cork, phloem, cambium, and xylem.
- The xylem of a tree carries water from the roots to the leaves.

### **Trees and the Environment**

- Trees renew our air supply by absorbing carbon dioxide and producing oxygen.
- The amount of oxygen produced by an acre of trees per year equals the amount consumed by 18 people annually. One tree produces nearly 260 pounds of oxygen each year.
- One acre of trees removes up to 2.6 tons of carbon dioxide each year.
- Shade trees can make buildings up to 20 degrees cooler in the summer.
- Trees lower air temperature by evaporating water in their leaves.
- Tree roots stabilize soil and prevent erosion.
- Trees improve water quality by slowing and filtering rain water, as well as protecting aquifers and watersheds.
- The cottonwood tree seed is the seed that stays in flight the longest. The tiny seed is surrounded by ultra-light, white fluff hairs that can carry it on the air for several days.

### **Record-setting trees**

- One of the tallest soft wood trees is the General Sherman, a giant redwood sequoia of California. General Sherman is about 275 feet or 84 meters high with a girth of 25 feet or 8 meters.
- The 236 foot or 72 meter high Ada Tree of Australia has a 50 foot or 15.4 meter girth and a root system that takes up more than an acre.
- The world's tallest tree is a coast redwood in California, measuring more than 360 feet or 110 meters.
- The world's oldest trees are 4600-year-old Bristlecone pines in the USA.

### **Trees and science.**

- Dendrochronology is the science of calculating a tree's age by its rings.
- Tree rings provide precise information about environmental events, including volcanic eruptions.
- A mature birch tree can produce up to one million seeds per year.
- Moon trees were grown from seeds taken to the moon by Stuart Roosa, Command Module pilot of the Apollo 14 mission of January 31, 1971. The effort included 400–500 seeds, which orbited the moon on the first few days of February 1971. NASA and the USFS wanted to see if being in space and in the moon's orbit would cause the seeds to grow differently than other seeds.