

UPDATE
Redbay ambrosia beetle – laurel wilt of avocado

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TO: Extension faculty and Master Gardeners

FROM: Jonathan H. Crane, Tropical Fruit Crop Specialist

RE: Update on control of the redbay ambrosia beetle – laurel wilt pathogen

Laurel Wilt Pathogen

The US-EPA recently granted a Section 18 Emergency Exemption for the use of Tilt® Fungicide for the control of laurel wilt on avocado trees. This means that for the next 3 years Tilt® Fungicide may be legally used on avocado trees. Three application methods are approved, injection/infusion, tree directed with a bark penetrant, and soil drench. HOWEVER, at the time this petition for an emergency exemption to use Tilt® Fungicide was made much detail in the use and efficacy of the product was unknown. MUCH HAS CHANGED AND MUCH MORE NEEDS TO BE KNOWN. The following summarizes these issues.

1. Tilt® Fungicide is an oil based formulation of propiconazole and phytotoxicity to avocado trees may be an issue and is about to be tested. Early research used a different formulation of propiconazole named Alamo® (not oil based) infused through the flare roots at the base of the tree and some phytotoxicity was noted on some avocado trees. The reason Tilt® and not Alamo® was petitioned for was cost of Alamo® was prohibitive. The phytotoxicity, rates, residual effect, and overall efficacy of Tilt® on mature trees will be tested in the near future.
2. Research since the petition was submitted has shown that a tree directed spray with Tilt® Fungicide mixed with a bark penetrant does not appear to be feasible for mature (old) trees. In other words not enough of the fungicide gets inside the tree to protect it from the laurel wilt pathogen. Research with tree directed sprays on younger avocado trees (i.e., those less than about 7 years old) may be promising but needs further testing.
3. Research since the petition was submitted has shown applications of Tilt® Fungicide as a soil drench does not work.

Researchers have previously surveyed a very wide range of fungicide active ingredients in an attempt to find 1 or more products that will control the laurel wilt pathogen. Currently, researchers are investigating the feasibility of root flare infusion of Tilt®, Alamo®, and other fungicides into avocado trees. They are looking at application formulations and rates, techniques and efficacy, toxicity to the trees, and cost to determine if root flare infusion of any available fungicides will prove to be useful. Once this occurs then the effect of the fungicide or fungicides of choice must be tested for the effect on fungicide residue levels in the fruit.

Right now:

1. Alamo® may be used as a root flare infusion for native redbay trees (*Persea americana*) but is illegal for use on avocado. If someone elects to treat their redbay trees with Alamo® we recommend they hire a licensed and insured arborist with experience in flare root infusion. Alamo® is not legal to use on avocado trees and cannot be recommended at this time.
2. We do not recommend applying Tilt® to commercial and door yard avocado trees because so much is unknown about the efficacy, potential toxicity, best application method, and cost effectiveness of the material.

Redbay Ambrosia Beetle

Part of the investigation into the biology and control of the redbay ambrosia beetle has been to survey a wide range of both labeled and experimental contact insecticides. Work on systemic insecticide materials is commencing. Currently, the efficacy of the contact insecticides has been inconsistent. In other words the same materials perform differently in different tests. The following contact insecticide products are registered for use on avocado trees, Danitol®, Malathion®, Permethrin®, and Lannate®. However, since the beetle is very small and the presence of the insect is usually not detected until symptoms of laurel wilt occurs, applying contact insecticides without knowing if the beetle is present is not recommended. Furthermore, the insect is inside the tree and the residual effect of contact insecticides on the bark has so far not been shown to last very long.

Research into trap and kill systems and repellents is underway and the investigation into the basic biology and beetle dynamics with the environment and other beetles continues.

Recommendations

1. We do not recommend using Tilt® in an attempt to control the disease due to the lack of specific rate, toxicity, efficacy, and perfected application technique for avocado trees. Tree directed sprays and soil drenches do not appear to be feasible application methods at this time.
2. We do not recommend applying contact insecticides at this time since the first sign of the beetle is the symptoms of the disease. By this time the beetle is inside the tree and contact insecticides will have no effect on the beetle. There are not systemic insecticides to recommend at this time.

The investigations on control of laurel wilt and the redbay ambrosia beetle is on-going. There is a large research effort on this problem and a major effort is being made by UF/IFAS. We can look forward to new findings and perhaps strategies in the future that will be efficacious and economic.