

# Holy Guacamole: Researcher Tracks Invasive Beetle Threatening Florida's Avocados

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(PhysOrg.com) -- A researcher at North Carolina State University is tracking the movement of the Redbay Ambrosia beetle, an invasive insect that, if it spreads to southeast Florida, may severely affect the production of avocados, a \$15 million to \$30 million industry in the state.

First detected in the United States near Savannah, Ga., in 2002, the beetle had spread to Hilton Head Island, S.C., by 2004, causing widespread mortality in Redbay trees. Dr. Frank Koch, a research assistant professor at NC State who works with the United States Forest Service to help monitor and track the geographical movement of invasive species like the Redbay Ambrosia beetle, says it currently is continuing its journey south.

The female Ambrosia beetle carries fungal spores on its body, a source of food for adult beetles and their larvae, which then inoculate Redbay trees. The fungus causes laurel wilt, the source of widespread and severe levels of Redbay mortality in the Southeastern coastal plain. When the beetles bore into the sapwood of a host tree, the fungus germinates in the tree tissue and can cause tree death.

"This beetle is very small - roughly two millimeters long - but it kills extremely rapidly," Koch says. "There are thousands of species of Ambrosia beetles, but they usually don't cause damage to this extent. This particular beetle is very serious because the fungus it carries is remarkably lethal."

The worry, Koch says, is that as the beetle continues to spread down the coast, it will begin to affect avocado trees, which belong to the same genus as Redbay trees.

"This beetle is moving very fast, and it may be in the avocado-growing region of Florida within a year or two," Koch says. "The avocado industry is very concentrated - about 7,500 acres southwest of Miami - and an invasion by these beetles could cause major damage to the production of avocados."

Koch is part of a team that hopes to devise a plan in case the Redbay Ambrosia beetle moves to southwest Miami, as they predict. The team is currently monitoring the beetles' path and hopes to catch them - and stop their progress - before they get to avocado trees. The biggest problem for researchers is that it's hard to tell a tree has been infested until it begins dying.

"There are a lot of people very concerned about the potential of this predator attacking avocado trees. And no one knows quite what to do," Koch says. "Some are trying to figure out if they can protect avocado trees with fungicides. Others wonder if it is possible to closely watch the avocado orchards and isolate and remove any infected trees as soon as they begin to show signs of wilting. Researchers are trying to determine the effectiveness of these options in hopes of coming up with a solution to protect avocado groves."

Provided by North Carolina State University

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