



Dr. Tim Spann, CAC research program director, addresses the group in one of Mission Produce's groves.

Florida Educators Visit California To Warn of a Deadly Threat

By Jeff Wasielewski

In early August of this year, a group of scientists and educators from the University of Florida traveled across the country to share their knowledge of a deadly disease with the avocado growers of California. California grows more than 80 percent of all the avocados produced in the United States and the group from South Florida had dire news of a potential danger to the lucrative California avocado industry. The group was hosted by the California Avocado Commission and spoke to growers in three different avocado growing regions: San Luis Obispo, Ventura and Fallbrook.

The scientists and educators on the trip traveled from

Homestead, FL, where most of the remaining percentage of domestic avocados are grown. South Florida is currently dealing with the devastating effects of a disease called laurel wilt. This disease is transmitted by tiny ambrosia beetles that bore into trees in the Laureaceae, or laurel family, in order to grow a fungus they transport to feed to their young. The fungus, *Raffaelea lauricola*, is deadly to avocados and some related native species. Avocados are in the laurel family and severely overreact when exposed to the fungus. The tree tries to wall off the fungus by blocking its xylem tissue, but the fungus quickly jumps the blockade. The tree responds with a more aggressive xylem wall, which eventually leads to the tree's death as it can

no longer draw water and nutrients up to the canopy through the blocked tissue.

The disease has killed more than 40,000 avocado trees since its arrival in South Florida in 2012. Laurel wilt entered the country in 2002 through Port Wentworth, GA, and has since reached as far north as North Carolina and as far west as Texas. The disease has spread primarily on native species and has killed more than 500 million native swampbay and redbay trees. Laurel wilt gets its name from the fact that it affects trees in the laurel family and trees with the disease quickly wilt, turning once healthy leaves to a crispy brown in a matter of days. The disease works so quickly that the leaves do not have time to fall and will remain on the tree — a hallmark of laurel wilt.

The disease is vectored by the tiny aforementioned ambrosia beetles and also can move through root grafts. Most avocado groves in South Florida are more than 20 years old with the roots of adjacent trees in the grove overlapping, and in many cases, grafted together, allowing elements to pass from tree to tree. Once laurel wilt gets into a grove through beetle infestation, the disease will often move right down a row killing tree after tree through adjacent root grafted trees.

The purpose of the group's trip to California was to impart the knowledge they had compiled after years of dealing with this deadly disease. The group consisted of Dr. Jonathan Crane, a tropical fruit specialist; Dr. Daniel Carrillo, a tropical fruit entomologist; Jeff Wasielewski, an extension agent; Dr. Randy Ploetz, a pathologist; Dr. Edward 'Gilly' Evans, an economist; and Dr. Bruce Schaffer, an ecophysiologicalist. Each team member spoke about his area of expertise to the avocado growers and educators present at the three meetings.

The take-home message from the group was that California growers should have a plan in place on how to collectively deal with the disease in the event that it makes it to California. Frequent scouting of groves and fast and efficient removal and destruction of trees is currently the best tool available to battle this disease. Removed trees need to be burned or chipped in place. The root system also must be broken and separated from adjacent trees so transmission by root grafting cannot contribute to the spread of the disease.

The information flow was not only one way and the group from South Florida delighted in being educated about the growing techniques employed in Califor-



Avocado trees die so quickly from this disease that they are unable to shed their leaves.



Dr. Bruce Schaffer (L) and Dr. Jonathan Crane (R) speak to Arby Kitzman (C) avocado grower in Morro Bay.



Dr. Gilly Evans speaks with Gabe Filipe from Mission Produce.

nia. The group visited several groves and the Brokaw Nursery. Producers shared information on pruning techniques, water quality issues, root stock types, pest control and harvesting methods.

The group would like to extend a special thank you to Dr. Tim Spann, the research program director of the Cali-

fornia Avocado Commission. Dr. Spann was an affable host and safely transported the group hundreds of miles all while maintaining a productive schedule and a great attitude. Thank you Dr. Spann, and may laurel wilt never make it to California! 🥑



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Dr. Daniel Carrillo inspects leaf samples to find insect damage.



Dr. Randy Ploetz examines an avocado tree for signs of disease.