



## (ROD) Rapid Ohia Death

a New Threat to Hawaii's Forests and Watersheds

Rapid 'Ōhi'a Death (ROD), also called Ceratocystis wilt, or 'ōhi'a wilt, caused by the fungus *Ceratocystis fimbriata*, is a very new and serious threat to our dominant native forest tree. We have seemingly dodged the previous two "bullets", 'ōhi'a dieback (a natural process) and 'ōhi'a rust, (both will be described in next month's Voice.) However, ROD is by far the worst and scariest threat. Reports of beautiful mature 'ōhi'a dying so quickly the brown leaves were still attached began coming out of lower Puna in about 2010. Once a patch of dead leaves is seen in the canopy, the tree can be dead within a few weeks, hence the name rapid 'ōhi'a death. However, prior to that, the fungus has been building up in the vascular system of the tree until it is effectively "choked off."

USDA Agricultural Research Service -Pacific Basin Agricultural Research Center Plant Pathologist Dr. Lisa Keith has been the lead in laboratory research on the fungus while U.S. Forest Service ecologist Dr. Flint Hughes, and Dr. JB Friday of UH Cooperative Extension Service Forestry have been handling the field research aspects. Both studies have had support from several other agencies.

Interestingly, this species of fungus has been in Hawai'i on other host plants for decades but has not adversely affected 'ōhi'a until now. In fact, Dr. Keith has found that it is a new "strain" of the fungus, likely something from elsewhere in the world, accidentally introduced into the State. Don't get the idea that we are immune to the disease in Volcano i.e., that it is too cold here. The fungus has been recovered from dead or dying 'ōhi'a up the Wailuku River watershed at 5,000 ft. elevation, Hōlualoa and Kealakekua on the dry side of the Island. As of November, 'ōhi'a wilt has been found in Volcano Village and Royal Hawaiian Estates.

At least 15,000 acres in lower Puna were already affected with 'ōhi'a wilt as of 2014 and mortality is as high as 95% in some areas. So how is the fungus getting around? It does produce spores, but it is not clear how easily they are dispersed. This species of fungus is not known to be wind dispersed as the spores are sticky rather than powdery. However it could be moved by 'ōhi'a wood, footwear, heavy equipment and tires. This is one step in the epidemic where we all can try to at least slow down its spread. **DON'T MOVE OHIA WOOD, FIREWOOD, OR ANY LIVE OHIA PLANTS OR CUTTINGS OFF YOUR PROPERTY AND BE CAREFUL WHAT YOU BRING HOME.** If you hire tree trimmers, ask them to sterilize all cutting tools before using them at your place, as well as another job site. Spray all cutting tools used on 'ōhi'a before and after, including chainsaw bars with a freshly mixed 10% bleach/water solution, or 70% rubbing (isopropyl) alcohol. If you use a bleach solution, you should clean and oil all steel parts after you rinse and wipe the bleach off. The Hawai'i Department of Agriculture has instituted an emergency quarantine of all 'ōhi'a products on the Big Island; no one may ship 'ōhi'a wood, plants, lei, or other 'ōhi'a products to other islands without inspection and permit. See: <http://hdoa.hawaii.gov/blog/main/ohiaquarantine/> for more information.

In next month's installment, we will discuss the two other "maladies" of 'ōhi'a seen in the past: 'Ōhi'a dieback (or 'ōhi'a decline) and 'ōhi'a rust (*Puccinia psidii*) to distinguish all three of them. Most of this information came from the website of Dr. JB Friday U.H. Extension Forester: [www.RapidOhiaDeath.org](http://www.RapidOhiaDeath.org) Also, information on the etiology of the fungus is from a publication by Keith et al (2015): <http://apsjournals.apsnet.org/doi/10.1094/PDIS-12-14-1293-PDN>

Brochures on ROD are available at the VCA table at the Farmers Market on Sundays.

submitted by Pat Conant