

plant disease

Editor-in-Chief: Mark L. Gleason

Published by The American Phytopathological Society

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June 2008, Volume 92, Number 6


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<http://dx.doi.org/10.1094/PDIS-92-6-0976A>

Disease Notes

First Report of Laurel Wilt Disease Caused by a *Raffaelea* sp. on Avocado in Florida

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 Open Access.

Laurel wilt is a vascular disease of redbay (*Persea borbonia* (L.) Spreng.) and other plants in the family Lauraceae in the southeastern United States. It is caused by a fungus (*Raffaelea* sp.) that is vectored by a non-native insect of Asian origin, the redbay ambrosia beetle (*Xyleborus glabratus* Eichhoff) (1). Since the initial detection of the redbay ambrosia beetle near Savannah, GA in 2002, **laurel wilt** has caused widespread mortality of redbay in Georgia, South Carolina, and Florida (1). In September 2007, an **avocado** (*Persea americana* Mill.) tree planted approximately 10 years earlier in a residential neighborhood in Jacksonville, FL was discovered to be infected with **laurel wilt**. The crown was in various stages of decline, including upper branches that were dead and leafless, those with **wilted** and drooping foliage, and those with healthy foliage. Removal of bark from **wilted** branch sections revealed black-to-brown streaks of discoloration in the sapwood and a few ambrosia beetle holes from which the discoloration extended into the adjacent wood. A *Raffaelea* sp. was isolated from discolored wood samples by surface sterilizing wood chips by submersion in a 5% sodium hypochlorite solution for 30 s and plating them on cycloheximide streptomycin malt agar (2). Small subunit (18S) sequences from the rDNA were amplified by PCR and sequenced with primers NS1 and NS4 (3). BLASTn searches revealed homology to *Raffaelea* sp. C2203 (GenBank Accession No. EU123076, 100% similarity, e-value of 0.0, and a total score of 1,886), which is known to be the causal agent of **laurel wilt** (1). The small-subunit rDNA sequence for this isolate has been deposited into GenBank and has been assigned accession No. EU257806. Pathogenicity of the **laurel wilt** pathogen on *Persea* spp. in growth chamber trials has been previously demonstrated (1). **Laurel wilt** is of concern to the commercial **avocado** industry and is a potential threat to the Lauraceae elsewhere in the Americas.

References: (1) S. W. Fraedrich et al. *Plant Dis.* 92:215, 2008. (2) T. C. Harrington. *Mycologia* 73:1123, 1981. (3) T. J. White et al. Page 315 in *PCR Protocols, a Guide to Methods and Applications*. M. A. Innis et al., eds. Academic Press, San Diego, CA, 1990.

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Impacts of laurel wilt disease on redbay (*Persea borbonia* (L.) Spreng.) population structure and forest communities in the coastal plain of Georgia, USA

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Albert E. Mayfield, Martin MacKenzie, Philip G. Cannon, Steven W. Oak, Scott Horn, Jaesoon Hwang, and Paul E. Kendra