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Disease Notes

First Report of Laurel Wilt Caused by *Raffaelea lauricola* on Sassafras in Mississippi

J. J. Riggins, Department of Entomology and Plant Pathology, Mississippi State University, Mississippi State 39762; **S. W. Fraedrich**, USDA-Forest Service Forestry Sciences Laboratory, 320 Green Street, Athens, GA 30602; and **T. C. Harrington**, Department of Plant Pathology, Iowa State University, Ames 50011

Laurel wilt is caused by the fungus *Raffaelea lauricola* T.C. Harrin., Aghayeva & Fraedrich and is lethal to redbay (*Persea borbonia* (L.) Spreng.), sassafras (*Sassafras albidum* (Nutt.) Nees), and other species in the Lauraceae (1). The fungus is carried by the redbay ambrosia beetle (*Xyleborus glabratus* Eichh.), which is native to Asia. After being discovered in Georgia in 2002 (1), *X. glabratus* and *R. lauricola* have spread rapidly, causing extensive redbay mortality in South Carolina, Georgia, Florida, and Mississippi (1,4). The disease has also been confirmed on sassafras in Florida, South Carolina (1), and Georgia. Questions remain as to whether laurel wilt will continue to spread on sassafras, which often occurs as scattered trees in the eastern United States. In June 2010, a homeowner reported that a sassafras tree north of Van Cleave, MS (30.668°N, 88.686°W) had begun wilting in late May. This landscape tree had three 10-m high stems (~20 cm in diameter at breast height). Dark staining in the xylem was observed around the entire circumference of all three stems and nearly all leaves were bronze colored and wilted. No ambrosia beetle tunnels were observed in the stems. No other symptomatic Lauraceae were encountered in the wooded area within 300 m. The nearest known location with laurel wilt on redbay was ~15 km away (4). A Lindgren funnel trap baited with manuka oil (2) was placed at the site in June and monitored biweekly until November, but no *X. glabratus* adults were captured. Chips from discolored xylem of

the sassafras were surface sterilized, plated on cycloheximide-streptomycin malt agar, and *R. lauricola* was readily isolated (1). Identity of the fungus (isolate C2792 in collection of T. Harrington) was confirmed by using partial sequences of the 28S rDNA (3). The sassafras sequence was identical to that of all known sequences of *R. lauricola* in the United States, including GenBank No. EU123076 (the holotype isolate from redbay). To confirm pathogenicity, isolate C2792 was grown on malt extract agar and three redbay (average: 141 cm high and 12 mm in diameter at soil interface) and three sassafras (average: 170 cm high and 17 mm in diameter at soil interface) potted plants were wound inoculated with 0.2 ml of a spore suspension (4.9×10^6 conidia/ml) (1). Three control plants of each species were inoculated with sterile deionized water. After 8 weeks in a growth chamber at 26°C, all inoculated redbay and sassafras plants exhibited xylem discoloration above and below the inoculation point, two of the redbay and two of the sassafras had died, and the other plant of each species exhibited partial wilt (the main terminal or one or more branches). All control plants were asymptomatic. *R. lauricola* was reisolated from all inoculated symptomatic plants but not from controls. To our knowledge, this is the first report of laurel wilt on sassafras in Mississippi. Both redbay (4) and sassafras appear to be highly susceptible to the disease as it moves westward. Sassafras is less attractive than redbay to *X. glabratus* and it was thought that this might contribute to slowing the spread of laurel wilt once outside the range of redbay (2). Nonetheless, our observations confirm that sassafras can be infected where laurel wilt on redbay is not in the immediate vicinity.

References: (1) S. W. Fraedrich et al. Plant Dis. 92:215, 2008. (2) J. L. Hanula et al. J. Econ. Entomol. 101:1276, 2008. (3) T. C. Harrington et al. Mycotaxon 111:337, 2010. (4) J. J. Riggins et al. Plant Dis. 94:634, 2010.