DISEASE NOTES

First Report of Laurel Wilt Disease Caused by *Raffaelea lauricola* on Swamp Bay in Louisiana

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Laurel wilt is a vascular disease caused by *Raffaelea lauricola* (T.C. Harr., Fraedrich & Aghayeva) and transmitted by the exotic redbay ambrosia beetle (*Xyleborus glabratus* Eichhoff). The beetle and fungus were first detected in the United States in the early 2000s (**Fraedrich et al. 2008**), and since that time the disease has caused widespread mortality of laurel family members (Lauraceae) across the Southeast, primarily on native redbay (*Persea borbonia* [L.] Spreng). Other lauraceous hosts including avocado (*Persea americana* Mill.), sassafras (*Sassafras albidum* L.), and swamp bay (*Persea palustris* [Raf.] Sarg.) (**Fraedrich et al. 2008**, **2015**) are susceptible to laurel wilt. In April 2018, we investigated the mortality of a swamp bay tree (20-cm diameter at breast height, 9-m height) located near DeRidder in Beauregard Parish, Louisiana

(30.86811°N, 93.17597°W). It was one of several symptomatic trees located along a seasonally wet stream, a preferred habitat for swamp bay. Removal of bark of the infected tree revealed black vascular discoloration in the sapwood, characteristic of laurel wilt. Beetle entrance holes similar in size to those reported for *X. glabratus* (**Hanula et al. 2008**) were observed, but no beetles were found in galleries. Surface-sterilized sapwood sections were plated on cycloheximide-streptomycin malt agar. A fungus consistently isolated from infected tissues was identified as *R. lauricola* based on morphological characteristics that included its mucoid growth, conidiophores, and oblong/ovoid shape conidia with variable length of 4.5 to 6.0 × 2.0 to 3.0 µm wide (**Harrington et al. 2008**). The identity of two representative isolates was confirmed by positive amplification of the DNA from pure cultures using the *chk* and *ifw* polymerase chain reaction assays (**Dreaden et al. 2014**). Sequences (GenBank accessions MK491842 and MK491843) showed 100% homology to the *R. lauricola* PL159 isolate sequence (GenBank accession no. KF381410). To confirm pathogenicity, the two isolates were evaluated on swamp bay plants (average: 77 cm high and 13 mm in diameter at ground line). Nine swamp bay potted plants were used: three plants for each isolate and the control. Plants were wounded with a 2.5-mm drill bit to a depth of 5 to 7 mm and inoculated with 50 µl of a 1×10^6 spore concentration from one of the two *R. lauricola* isolates or mock inoculated with sterile deionized water. Wounds on all plants were wrapped with Parafilm M, and plants were incubated at 25°C in a growth chamber. After 7 weeks, control plants remained healthy, whereas all inoculated plants died and exhibited wilting and black discoloration in the sapwood. *R. lauricola* was reisolated from all symptomatic plants but not from control plants. This is the first documentation of laurel wilt caused by *R. lauricola* on swamp bay in Louisiana. Since 2015, laurel wilt has spread on sassafras through nine Louisiana parishes and is now occurring in an area approximately 286 km to the southwest of the site where the disease was first reported (**Fraedrich et al. 2015**). The disease has also been reported on redbay in Lumberton, Texas, west of the current location. This new report adds to the growing concern that laurel wilt disease will continue to spread on vulnerable hosts as *X. glabratus* and *R. lauricola* move northward. The distribution of swamp bay and its proximity to sassafras, the predominant host of *X.*

glabratus and *R. lauricola* in Louisiana, could facilitate further spread of laurel wilt disease through this region.

The author(s) declare no conflict of interest.

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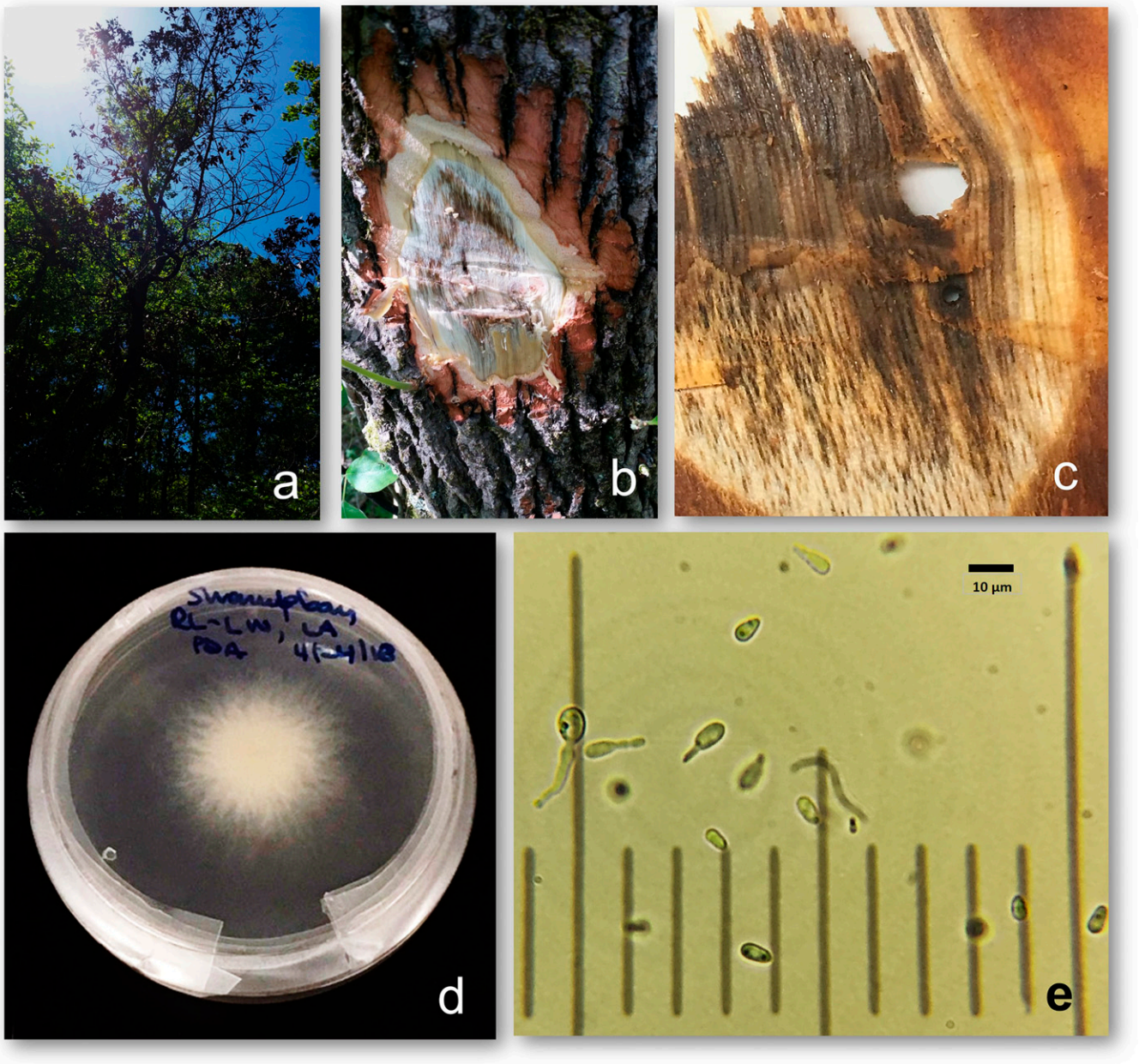

Supplementary Figure S1. a. An infected swamp bay tree along a seasonally wet stream showing dead branches with symptoms of laurel wilt disease; b-c. Black streaking tissue discoloration typical of laurel wilt diseases on the infected tree; d-e. A culture of a Raffaelea lauricola with mucoid growth isolated from the infected swamp bay tree and a microscopic observation of oblong and ovoid conidia.