Diseases Caused by Fungi and Fungus-Like Organisms

First Report of *Fusarium fujikuroi* Causing Leaf Spot of *Dalbergia odorifera* in China

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Dalbergia odorifera T. Chen is a national second-grade protected tree and one of the four famous trees in China, with high medicinal and economic value. Leaf spot disease in this plant can cause the leaves to dry up, perforate, or even fall off, which affects the growth and development and also has a great influence on its products. In May 2019, leaf spot of *D. odorifera* was found and observed in Chengmai County (N19°40', E110°0'), Hainan Province, China, and the symptomatic leaves were brought back to the laboratory for research. According to our survey at that time, the incidence of the disease was between 10 and 15%. A sterile stainless-steel scalpel was used to cut the tissues at the junction of the leaf lesions and placed on a clean bench, soaked in alcohol (75%) for 30 s, and rinsed thrice with sterile water. Then it was inserted obliquely onto lactic acid-containing potato dextrose agar (PDA) and incubated at 28°C for 5 days. The growing prominent colonies were singled out and reinoculated on PDA and Spezieller Nährstoffarmer agar (SNA) plates. Preliminary identification was based on morphological characteristics, followed by molecular identification of strains by evaluating genes for translation elongation factor-1 α (TEF-1 α), β -tubulin, mitochondrial small subunit (mtSSU) (Cao et al. 2020; Duan et al. 2020; Stenglein et al. 2010), and

histone H3 (Jacobs et al. 2010). Through morphological observation, the isolate was identified as *Fusarium fujikuroi*. At the initial stage of growth on PDA, the strain produced a large number of white hyphae, followed by pink and purple-brown hyphae in the center of the colony, which spread to the surrounding area. The microspores were abundant, colorless, elliptic or clavate, without septum or one- to two-septate, and the size was about 3.3 to 13.5 $\times$ 1.2 to 3.2 μ m. After 9 days of culturing on SNA medium, a few large conidia were observed, typically sickle-like, with three to four septa with a size of about 20 to 40.2 $\times$ 2.3 to 4.4 μ m. The identity of the strains was determined by comparing the gene sequences of TEF-1 α , mtSSU, β -tubulin, and histone H3 by NCBI BLAST. The results showed that TEF-1 α (MN958396), mtSSU (MN958394), β -tubulin (MN958395), and histone H3 (MN958397) from the target strain (jxht0302) had 100% sequence homology with *F. fujikuroi* (GenBank accession nos. KF604040.1, MF984420.1, XM023575231.1, and MF356523.1, respectively). Next, the infection of *D. odorifera* seedlings with and without injury was studied using a fungus block, with PDA as a control. Two days after inoculation with injury, obvious lesions were observed on the leaves, which appeared at least 5 days postinoculation without injury, with no lesions in the control group. *F. fujikuroi* could be reisolated from the leaves with lesions but not from the control group. *F. fujikuroi* causes black rot of *Macleaya cordata* and maize ear rot (Duan et al. 2020; Yu et al. 2019). As far as we know, this is the first report of *F. fujikuroi* causing leaf spot disease of *D. odorifera*. Given the importance of *D. odorifera* products, this disease needs more attention to tackle it.

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