Diseases Caused by Fungi and Fungus-Like Organisms

First Report of Anthracnose Caused by *Colletotrichum karstii* on *Fatsia japonica* in Sichuan, China

Xiu-lan Xu,^{1,2,3} Qian-gang Xiao,¹ Chun-lin Yang,^{2,3,†} and Ying-gao Liu^{2,3}

¹ Forestry Research Institute, Chengdu Academy of Agricultural and Forestry Sciences, Chengdu, 611130, China

² National Forestry and Grassland Administration Key Laboratory of Forest Resources Conservation and Ecological Safety on the Upper Reaches of the Yangtze River, Sichuan Agricultural University, Chengdu, Sichuan 611130, China

³ Sichuan Province Key Laboratory of Ecological Forestry Engineering on the Upper Reaches of the Yangtze River, Sichuan Agricultural University, Chengdu, Sichuan 611130, China

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Fatsia japonica (Thunb.) Decne. & Planch. (Araliaceae), an evergreen shrub, is widely planted in urban settings at the south of the Yangtze river in China. Leaf-spot symptoms were observed on 120/200 *F. japonica* plants at Sichuan Agricultural University. Initially, yellowish spots appeared on the leaves and became white with age. The spots continued to expand with time, developing irregular margins and eventually encompassing the entire leaf. Eventually, diseased leaves became curled and died. Four single-spore isolates were obtained following the method of Chomnunti et al. (2014). The colonies developed on potato dextrose agar (PDA) were white to gray with fluffy aerial hyphae. The base of the mycelium was yellow. On the host conidiomata circular to elliptical, measured 108 to 335 × 107 to 250 μm ($n = 20$). Conidiophores were bell-shaped to cylindrical, hyaline, usually one-celled, unbranched, 9.7 to 23.6 (to 28) × 3.5 to 5.5 μm ($\bar{x} = 16.5 \times 4.6 \mu\text{m}$, $n = 15$). Conidia measured 12.5 to 17.6 × 5.1 to 7.9 μm ($\bar{x} = 14.9 \times 6.7 \mu\text{m}$, $n = 25$), were hyaline, straight, unicellular, cylindrical. Appressoria formed abundantly on slides, measured 12.4 to 25.4 (to 29.6) × 6.3 to 18.4 μm ($\bar{x} = 18.9 \times 13.4 \mu\text{m}$, $n = 30$), were dark brown to black, elliptical to irregular. Ascospores on PDA were brown to dark brown, global, covered by aerial mycelium, and setae were absent. Ascospores measured 13.2 to 19.1 × 4.0 to 6.1 μm ($\bar{x} = 16.0 \times 4.8 \mu\text{m}$, $n = 20$), and one-celled, hyaline, slightly curved. The representative isolate SICAUCC 20-0010 was used for genomic DNA extraction following the

instructions of the Plant Genomic DNA extraction kit (Tiangen, China), and the internal transcribed spacer (*ITS*, MT393946), glyceraldehyde-3-phosphate dehydrogenase (*GAPDH*, MT425977), beta-tubulin (*TUB2*, MT425978), chitin synthase (*CHS-1*, MT425976), and actin (*ACT*, MT425975) genes were amplified with ITS5/ITS4 (White et al. 1990), GDF/GDR (Guerber et al. 2003), T1/Bt2b (O'Donnell and Cigelnik 1997), CHS-79F/CHS-354R, and ACT-512F/ACT-783R (Carbone and Kohn 1999) primers, respectively. *ITS*, *GAPDH*, *CHS-1*, and *ACT* BLAST showed 100% homology with sequences of *Colletotrichum karstii* (Damm et al. 2012; Xu et al. 2019; Yang et al. 2011), namely, JQ005186 (555/555 bp), MK359214 (238/238 bp), JQ005360 (274/274 bp), and MK359211 (269/269 bp), respectively. *TUB2* showed 99.60% homology with sequence JQ005620 (495/497 bp). The fungus was identified as *C. karstii* based on morphology and a multigene phylogeny. Four leaves from each of three healthy *F. japonica* plants were sprayed with a conidial suspension (1×10^5 conidia/ml) of the isolate SICAUCC 20-0010. Two additional mock-inoculated control plants were sprayed with sterile distilled water. Plants were incubated in a greenhouse at 26°C and 90% relative humidity with a 12-h photoperiod. The leaves developed chlorotic lesions 6 days postinoculation, and by 22 days postinoculation the remaining signs and symptoms had developed. No symptoms developed on the mock-inoculated controls. The fungus isolated from inoculated plants was morphologically identical to the original pathogen, fulfilling Koch's postulates. Anthracnose on *F. japonica* caused by *C. fructicola* and *C. gloeosporioides* has been reported in China (Shi et al. 2017; Wang 2007). However, this is the first report of anthracnose caused by *C. karstii* on *F. japonica*. Field observations indicated that this disease mainly occurs on old and weakened leaves. This disease affects the aesthetic appearance of the plants, reducing their appeal as landscape plants.

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The author(s) declare no conflict of interest.

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[†]Indicates the corresponding author.

E-mail: yangcl0121@163.com (C.L.Y.)