Diseases Caused by Fungi and Fungus-Like Organisms

First Report of *Arthrocladiella mougeotii* Causing Powdery Mildew on *Lycium chinense* in Henan, China

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Chinese matrimony-vine (*Lycium chinense* Mill.) is a widely distributed perennial landscape plant in China. It is a precious germplasm resource for cultivation, and its fruit is used as a traditional Chinese medicine (Yossa Nzeuwa et al. 2019). During October and November 2019, powdery mildew was observed on leaves of *L. chinense* in several locations (e.g., the campus of He'nan Normal University, Renmin Park, and Muye Park) of Xinxiang City, Henan Province, China. White powdery colonies were observed on adaxial and abaxial surfaces of leaves. Infected leaves were collected, and the morphological characteristics of the pathogen were determined microscopically. Three to four foot cells were about 35 µm long, and conidiophores ($n = 25$) were 70 to 120 × 6 to 10 µm (length × width). Conidia were cylindrical or elliptical and were 18 to 28 × 5 to 18 µm, average ($n = 50$) 23 × 9 µm, with a length/width ratio of 2.6. No teleomorph was observed. Based on these morphologic characteristics, the pathogen was initially identified as *Arthrocladiella mougeotii* (Braun and Cook 2012). Infected leaf surfaces were painted with cellulose acetate/acetone solution (5%, w/v), fungal mycelia were stripped after evaporation of acetone, and genomic DNA of the pathogen was extracted using the method described previously (Zhu et al. 2019). The rDNA internal transcribed spacer (ITS) region was amplified with fungus universal primer pair PMITS1/PMITS2 (Cunnington et al. 2003). The PCR product was sequenced by Invitrogen (Shanghai, China), and the resulting sequence of

725 bp was deposited in GenBank as accession number MT007282. BLASTn analysis revealed that MT007282 was 100% identical to *A. mougeotii* at 633 of 633 nt (accession no. AB022380). Pathogenicity was tested by carefully dusting conidia from infested leaves onto the upper surfaces of young leaves from three healthy plants. As a control, three noninoculated plants were incubated. Inoculated and control plants were then maintained separately in growth chambers (light/dark: 16 h/8 h; temperature: 18 to 20°C). White powdery mildew symptoms were visible on inoculated plants leaves 7 to 12 days postinoculation and were morphologically identical to those observed on the original diseased leaves, whereas control plants remained powdery mildew-free. Therefore, the causal organism of the powdery mildew was *A. mougeotii*, confirmed by morphological characteristics and ITS sequence data. *A. mougeotii* has been reported on *L. chinense* in the United States and some locations (e.g., Hebei and Xinjiang Province) in China (Glawe 2004; Tai 1979; Zheng and Yu 1987; Zhuang 2005) and on Goji berry (*L. barbarum*) in China and Australia (Kiss et al. 2018; Wang et al. 2015). To our best knowledge, this is the first report of *A. mougeotii* on *L. chinense* in Henan Province, China. Because this powdery mildew could endanger *L. chinense* and reduce fruit production of this medicinal plant, disease control should be developed and followed.

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