Diseases Caused by Fungi and Fungus-Like Organisms

First Report of Powdery Mildew Caused by *Erysiphe berberidis* on *Berberis fortunei* in China

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Berberis fortunei (Lindl.) is commonly used in Chinese traditional medicine (Liu et al. 2020). In April 2020, white powdery colonies covering up to 100% of both upper leaf surfaces and calyces were observed on this species growing on Anhui Agricultural University campus (31°51'51"N; 117°15'31"E) in Hefei City, Anhui Province, China. Sporulating mycelia were white and effuse. Conidiophores were erect, with straight, cylindrical foot cells, 20 to 26 × 9 to 12 μm (average: 24 × 11 μm) ($n = 30$), followed by one to three shorter cells, and producing conidia in chains. Conidia were ellipsoid-ovoid, subcylindrical, and measured 27 to 36 × 12 to 16.5 μm (average: 32.4 × 14.1 μm) ($n = 50$). For accurate identification, DNA was extracted from the mycelia, which were collected by scraping symptomatic leaves. The internal transcribed spacer (ITS) was amplified and sequenced using primers ITS1/ITS4. The 623-bp ITS (GenBank accession no.

MT449013) showed 99% identity with those of *Erysiphe berberidis* LC010057 (Takamatsu et al. 2015), KY661153 and KY660920. Based on morphological characteristics and phylogenetic analysis, the powdery mildew fungus on *B. fortunei* was identified as *E. berberidis* (Glawe 2003). Ten leaves on an asymptomatic *B. fortunei* were inoculated by gently pressing diseased leaves against the surface of healthy leaves. Ten noninoculated plants served as controls. All plants were maintained in a greenhouse at 22 to 25°C and >80% relative humidity. Inoculated plants developed powdery mildew colonies after 14 days, whereas uninoculated plants remained healthy. Morphological and molecular characters of the powdery mildew fungus on artificially inoculated plants were identical to those on naturally infected *B. fortunei*. Previously in Siberia, Russia, powdery mildew on woody plants has been reported to be caused by *E. berberidis* (Tomoshevich 2019). However, this is the first report of powdery mildew caused by *E. berberidis* on *B. fortunei* in China. Its identification will establish a foundation for controlling the disease in China.

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