



First report of *Alternaria tenuissima* causing leaf spot on *Dioscorea zingiberensis* in China

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In May 2019, approximately 30% of 372 yellow ginger (*Dioscorea zingiberensis* C. H. Wright) plants in six fields of Nanjing Botanical Garden (31° 14'N, 118° 22'E) showed 3 to 12 mm-wide black leaf spots. The fungus was isolated from symptomatic tissues, previously surface-disinfected with 1% sodium hypochlorite for 2 min, triple rinsed with sterile water, and plated on potato dextrose agar (PDA). The colonies were greyish-green or brown-yellow with whitish margins after 5 days of incubation at 25 °C. Conidia were obpyriform to ellipsoid, dark brown, septate, with 1–8 transverse and 0–3 longitudinal septa, with 11.2–48.5 × 4.5–12.3 µm in size ($n = 50$). The fungus resembled *Alternaria* spp. morphologically (Simmons 2007). The ribosomal internal transcribed spacer (ITS) region, plasma membrane ATPase (ATP) gene, and calmodulin (CAL) gene were amplified using primers ITS1/ITS4, ATPDF1/ATPDR1, and CALDF1/CALDR1, respectively (Lawrence et al. 2013). The consensus sequences of ITS, ATP and CAL (GenBank Accession Nos. MK560480, MT416124 and MT416125, respectively) from a representative isolate SY-4 showed 100%, 99.58% and 98.85% similarity with *Alternaria tenuissima* (Kunze) Wiltshire (KX015987, JQ671875 and JQ646209, respectively), and phylogenetic analysis confirmed the fungus identity. Ten leaves from each of three 1-month-old of *D. zingiberensis* plants were inoculated with 5-mm mycelial plugs, and kept at 25 °C with a 12-hour photoperiod. Sterilized PDA plugs were used as controls. Black spots similar to those observed in the field were visible on all the inoculated

leaves after 3 days, whereas no symptoms on the controls. *A. tenuissima* was only reisolated from all symptomatic leaves, fulfilling Koch's postulates. Although *A. tenuissima* has been reported to cause blight disease on Chinese yam (*Dioscorea polystachya* Turczaninow) in China, this is the first report of *A. tenuissima* causing leaf spot on *D. zingiberensis* in China and worldwide (Farr and Rossman 2022). Therefore, other yam varieties (*Dioscorea* spp.) may be threatened.

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