



First report of *Alternaria alternata* causing peanut grey blight in China

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In 2018, a previously uncharacterized disease was observed on peanut (*Arachis hypogaea*) in Qingdao city of China. Symptoms often occurred at the tip or margin of the leaves, and the lesions were light brown to dark brown, with wheel pattern of different thicknesses and more intensive. Disease incidence was about 5% in the area we investigated. There was usually a clear yellow halo at the edge of necrotic tissue. Diseased leaves (25 mm²) were surface disinfested in 1% NaOCl for 2 min, rinsed in sterile distilled water, placed on potato dextrose agar (PDA) and incubated at 25 °C in the dark for 5–7 days. Fungal colonies were initially white, becoming olivaceous, and turning brown with age. Conidia (22.5–40.0 × 8.0–13.5 μm in size) were obclavate, obpyriform or ellipsoidal with 3 to 5 transverse septa and 1 to 4 longitudinal septa. According to the symptoms and morphological characteristics, the pathogen was tentatively identified as *Alternaria alternata* (Simmons 2007).

Molecular identification was performed by sequencing four gene regions of a representative isolate ZHX2. The genes were *tef1*, *Alt a 1*, *gapdh* and OPA10-2 (Accession Nos. MN268736, MT559263, MN559264, MW295980), which showed 100%, 100%, 99.48% and 98.74% sequence identity to *A. alternata* CBS 916.96 from GenBank (KC584634, AY563301, AY278808, KP124632), respectively (Woudenberg et al. 2015). Phylogenetic analysis was done

using Neighbor-Joining (NJ) analysis based on those gene sequences. The isolate was identified as *A. alternata* based on molecular analysis and morphological characteristics.

Four peanut seedlings were spray-inoculated with conidia suspension (1.0 × 10⁶ conidia per mL), and sterile distilled water was used as control (three replicates) in a growth chamber (light culture at 30 °C for 12 h and dark culture at 25 °C for 12 h, 80% RH). Symptoms appeared on leaves 14 days after inoculation, and the lesions were brown, whorled, with yellow halo, while no symptoms appeared on the control. *A. alternata* was consistently re-isolated from symptomatic tissue, fulfilling Koch's postulates. To our knowledge this is the first report of *A. alternata* on peanut in China.

References

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