Diseases Caused by Fungi and Fungus-Like Organisms

First Report of *Curvularia* Leaf Spot of Field Corn, Caused by *Curvularia lunata*, in Mississippi

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In July 2021, foliar symptoms characterized by small, circular, and light brown to tan lesions (0.5 to 3 mm in diameter) with reddish-brown margins were observed on field corn (*Zea mays* L.) in two commercial fields in Hinds and Marion counties, Mississippi. Disease severity ranged from 2 to 15% on observed leaves. Symptomatic leaves were sealed in plastic bags, stored on ice, and transferred to the laboratory. Lesions were cut into small sections (approximately 4 mm²), surface-sterilized with 70% ethanol for 30 s, and rinsed with sterile water. Sterilized sections were transferred to potato dextrose agar (PDA) amended with chloramphenicol (75 mg/liter) and streptomycin sulfate (125 mg/liter) and incubated at 25°C in the dark for 7 days. Gray to brown-black colonies with orange margins and melanized, curved conidia with three transverse septa were observed microscopically (×400). Conidia measurements ranged from 15 to 25 µm in length and 7.5 to 12.5 µm in width ($\bar{x}$ = 20 × 9.8 µm; n = 44). Colony and conidia morphology were consistent with previous descriptions of *Curvularia lunata* (Wakker) Boedijn (Ellis 1971; Mabadeje 1969). Pure cultures were obtained, and DNA was extracted from 9-day-old cultures. Two isolates (TW003-21 and TW008-21) were selected for sequencing of the internal transcribed spacer (ITS) region using ITS4 and ITS5 primers. The 530-bp consensus sequences were deposited in GenBank under the accession nos. OK095277 and OK095278. BLASTn queries of the NCBI GenBank showed that the sequences shared 100% identity with *C. lunata* isolate DMCC2087 from Louisiana (MG971304) and isolate CX-3 from China (KR633084). A pathogenicity test was performed on V4/V5 stage corn plants (Progeny 9114VT2P) grown in 10.2-cm pots in the

greenhouse. Plants were transferred to a growth chamber 1 week prior to inoculation. The two isolates were grown on amended PDA for 14 days at 25°C, and an inoculum suspension was prepared for each isolate by rinsing culture plates with 2 ml of autoclaved reverse osmosis (RO) water amended with Tween 20 (0.01%) and resuspending them into 40 ml of RO water containing Tween 20. The final concentration was adjusted to 2.6×10^5 conidia/ml (TW003-21) and 2×10^5 conidia/ml (TW008-21). Ten corn plants were sprayed with 10 ml of inoculum suspension for each isolate using a Preval sprayer with a CO₂ canister, and 10 plants were sprayed with water containing Tween 20 only. Plants were incubated in a growth chamber at approximately 79% relative humidity and 25°C. Foliar symptoms including small, circular, and tan lesions, similar to those observed in the field, developed 3 days after inoculation. No symptoms were observed on control plants. Following incubation, symptomatic leaves were collected, and *C. lunata* was reisolated as described above. Colony, spore morphology and DNA sequences from inoculated plants were consistent with the original isolates as described above. The disease has been recently reported in Louisiana (Garcia-Aroca et al. 2018), Kentucky (Anderson et al. 2019), and Delaware (Henrickson and Koehler 2022). Although *Curvularia* leaf spot has been observed sporadically in Mississippi corn fields since 2009 (Allen, personal communication), to our knowledge, this is the first official report of the disease in Mississippi. While this disease has been more frequently encountered in Mississippi, the economic impact associated with *C. lunata* is currently unknown.

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