

Diseases Caused by Fungi and Fungus-Like Organisms

First Report of Anthracnose Caused by *Colletotrichum fioriniae* on Flowering Dogwood (*Cornus florida*) in the Southeastern United States

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The flowering dogwood (*Cornus florida* L.) is an important understory tree native to south and east pine and deciduous forest ecosystems of the United States and Canada (Jenkins and White 2002). This tree species has important cultural values associated with its use by Native Americans in natural remedies from bark and root extracts, dyes, and arrow shafts (Little et al. 1980; King 2003), and it is a popular ornamental landscape tree planted in the southern and eastern United States. Studies have reported localized decline of dogwood populations due to the introduction of the fungus *Discula destructiva* Redlin, the causal agent of dogwood anthracnose in the eastern United States (Daughtrey et al. 1996; Oswalt et al. 2012). During May 2024, dogwood trees showing branch dieback and irregular necrotic spots (>30% disease severity) on foliage were found on the Kisatchie National Forest, Louisiana (31.16912°N, 92.65568°W). Symptomatic leaf tissue sections (4 mm²) from collected samples were surface disinfected with 70% ethanol and 10% sodium hypochlorite and rinsed with sterile distilled water. Tissue sections were transferred to potato dextrose agar and incubated at 25°C for four days. A species of *Colletotrichum* was consistently isolated and identified based on conidia morphology. DNA analysis was performed for species identification through PCR amplifications of two loci, the rDNA internal transcribed region (ITS) using primers ITS1/ITS4 (White et al. 1990) and the partial sequence of the gene encoding actin (ACT) using

primers ACT-512F/ACT-783R (Carbone and Kohn 1999). Both ITS and ACT sequences of the *Colletotrichum* species isolate DW13 (GenBank accession nos. PV854696.1 and PX441942.1) showed 100 and 99.5% homology to the *Colletotrichum fioriniae* isolates (GenBank accession nos. MN684842.1 and PV541637.1), respectively. The pathogenicity of *C. fioriniae* was tested on healthy, 1-year-old dogwood trees planted in three-gallon pots kept in an incubation room at 25°C. The saplings were inoculated by placing two mycelial disks (4 mm²) of a *C. fioriniae* isolate on one nonwounded and one scalpel-tip-wounded disinfected leaves. Four individual saplings were inoculated as replicates. Pure agar disks were used as control treatment using the same methods. Initial symptoms observed 5 days postinoculation showed a necrotic annular ring around the point of inoculation which is typical of *Colletotrichum* infection. Symptoms were observed in all four replicates and caused premature fall of inoculated leaves at 21 days postinoculation. To complete Koch's postulates, the pathogen was reisolated from symptomatic leaves, and the newly established cultures were identified as *C. fioriniae*, known worldwide for causing anthracnosis in a wide range of hosts. This is the first report of *C. fioriniae* associated with flowering dogwood decline in Louisiana and the southeastern United States with potential forest health implications.

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