

Disease Note

Diseases Caused by Fungi and Fungus-Like Organisms

First Report of *Colletotrichum fioriniae* Causing Anthracnose on Pear Fruit in Serbia

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European pear (*Pyrus communis* L.) is one of the most important fruits in Serbia, with a total production of 55,938 t in 2021 (Statistical Office of the Republic of Serbia 2022). In November 2021, pear fruits (cv. Santa Maria) with typical anthracnose symptoms were collected in one storage facility in the area of Smederevo, Serbia. The disease incidence was about 2%. A total of nine infected fruits had dark, circular, sunken necrotic lesions with concentric rings of orange conidial masses produced in black acervuli. The tissue pieces from the edges of lesions (3 to 5 mm²) were surface sterilized in 1% sodium hypochlorite for 1 min, rinsed twice in sterilized distilled water, air dried, and incubated on potato dextrose agar (PDA) at 25°C. One isolate per diseased fruit was obtained (nine in total). Colony morphology of all isolates on PDA was light gray to pinkish on the upper side and pink to vinaceous on the reverse after 7 days of incubation at 25°C in the dark. The average growth rate was 64 ± 2 mm over 7 days. The conidia were hyaline, fusiform, aseptate, smooth-walled, with both ends acute, and measured 12.8 to 16.6 × 3.5 to 4.5 μm (*n* = 100). Appressoria were single, smooth-walled, dark brown, clavate to irregular outline, and 5.5 to 9.6 × 4.8 to 7.2 μm (*n* = 20). These morphological characteristics are consistent with the description of Damm et al. (2012) for *Colletotrichum fioriniae*. To confirm this identification, genomic DNA of representative isolate SZ-21-36 was extracted, and the internal transcribed spacer (*ITS*) region of the rDNA, partial beta-tubulin gene

(*BenA*), glyceraldehyde-3-phosphate dehydrogenase (*GAPDH*), and partial actin gene (*ACT*) were amplified using the primers ITS1/ITS4, Bt2a/Bt2b, GDF1/GDR1, and ACT512F/ACT783R, respectively (Hassan et al. 2019). The nucleotide sequence of each locus has been deposited in GenBank under accession numbers ON171625 (*ITS*), ON186696 (*BenA*), ON186697 (*GAPDH*), and ON186698 (*ACT*). Multilocus phylogenetic analysis based on the above-mentioned molecular markers placed the Serbian isolate of *C. fioriniae* with other isolates of this species deposited in GenBank (bootstrap support of 100%). Pathogenicity testing was conducted on symptomless, detached pear fruits (cv. Santa Maria). Five surface-sterilized fruits were wound-inoculated with 50 μl of a conidial suspension (1 × 10⁶ conidia/ml). After 10 days of incubation in a plastic chamber (25°C, 90% relative humidity, and 12-h photoperiod), typical anthracnose lesions developed on inoculated fruits. Five control fruits inoculated with sterile distilled water remained asymptomatic. The experiment was repeated once. Fungal colonies reisolated from the lesions showed the same morphological features as the original isolate. The pathogen was not reisolated from the control fruits. *C. fioriniae* was previously reported on European pear fruits in Croatia (Ivić et al. 2013), France (Da Lio et al. 2017), China (Fu et al. 2019), and the United States (Pavlović et al. 2019). To our knowledge, this is the first report of anthracnose of pear fruit caused by *C. fioriniae* in Serbia. Currently, the economic impact of anthracnose caused by this pathogen is minimal, but its presence decreases commercial value and quality of pear fruits, and there can be a risk of the further spread of *C. fioriniae* to other plant species.

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