

Disease Note

Diseases Caused by Fungi and Fungus-Like Organisms

First Report of *Stagonosporopsis pogostemonis* Causing Leaf Spot on Cauliflower in Italy

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In September 2022, a severe foliar disease was observed on 2- to 3-week-old 'Corsaro' and 'Parthenon' seedlings of cauliflower (*Brassica oleracea* L. var. *botrytis*) grown under greenhouses in a nursery in Caserta Province, Campania, Italy, with an incidence of 90% on approximately 150,000 plants. Affected plants showed numerous small, irregular, and depressed lesions bordered by a chlorotic halo on leaves that became necrotic and later dropped out, giving a shot-hole effect. Isolations were performed on leaf portions from 30 symptomatic samples, which were surface-sterilized by dipping in 70% ethanol for 30 s and then in a 1% sodium hypochlorite solution for 30 s and rinsed two times in distilled sterilized water. Tissue fragments were left to dry on sterile filter paper and then seeded on potato dextrose agar (PDA) amended with 0.5 g/liter of streptomycin sulfate (Sigma-Aldrich S.R.L., Steinheim, Germany). After 6 to 8 days of incubation at 24 ± 1°C, colonies revealed a consistent growth of a Phoma-like fungus resembling the *Stagonosporopsis* genus. On PDA, 1-week-old colonies were dark olivaceous green to brown with a white regular margin. Pycnidia (32 to 160 µm × 30 to 95 µm) were subglobose, and conidia (2.7 to 4.8 µm × 1 to 2.7 µm) were ellipsoidal and aseptate, with rounded ends and two polar guttules. All isolates had similar morphological characteristics;

therefore, further analyses were performed on one representative strain (CRSFA.753.22). The multilocus phylogenetic approach using the maximum likelihood method and Tamura-Nei model on rDNA internal transcribed spacer (*ITS*), tubulin (*TUB*), and RNA polymerase II (*RPB2*) sequences (accession nos. OQ318550, OQ326503, and OQ326504), including reference strains of *Stagonosporopsis* (Dong et al. 2021), demonstrated that CRSFA.753.22 clustered with *Stagonosporopsis pogostemonis* Luo, Huang & Manawas holotype (ZHKUCC 21-0001) with 91% bootstrap support. *ITS* and *RPB2* sequences had a 100% BLAST match to ZHKUCC 21-0001, whereas the *TUB* sequence had 99.69%. Pathogenicity tests were performed on 20 healthy 'Corsaro' plantlets. The leaves were surface sterilized with 70% alcohol and wounded with the sterile tip of a needle. A suspension of conidia and mycelial fragments, obtained from a 10-day-old colony of the strain CRSFA.753.22, was sprayed on the leaf surfaces at a distance of 20 cm. Five control plants were inoculated with sterile distilled water. The plants were then covered with plastic bags and kept on the shelf in a growth chamber at 25°C with a 12-h photoperiod. The first symptoms developed on the leaves 5 days postinoculation as irregular, small brown spots that gradually expanded. Leaf tissues showed chlorosis, which evolved into necrosis. *S. pogostemonis* was consistently reisolated from all diseased leaves but not from control plants, thus fulfilling Koch's postulates. In Italy, *Stagonosporopsis* species have been reported as severe plant pathogens (Garibaldi et al. 2022; Guarnaccia et al. 2022), and this is the first report of the species *S. pogostemonis* in the country.

References:

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Garibaldi, A., et al. 2022. J. Plant Pathol. 104:1157.
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