DISEASE NOTES

OPEN

First Report of Botrytis Blight Caused by *Botrytis cinerea* on *Paeonia lactiflora* in Serbia

Ž. Ivanović, J. Blagojević, T. Popović, and M. Ignjatov

Affiliations

Authors and Affiliations
Ž. Ivanović †
J. Blagojević
T. Popović , Institute for Plant Protection and Environment, 11000 Belgrade, Serbia
M. Ignjatov , Institute for Field and Vegetable Crops, 21000 Novi Sad, Serbia.

Published Online: 17 Jul 2017 | https://doi.org/10.1094/PDIS-09-16-1327-PDN

Paeonia lactiflora Pall. (herbaceous peony), a perennial flower, has been grown worldwide in gardens and landscapes (Munoz et al. 2016). Peony plants cv. Sarah Bernard with leaf blight were observed in two home gardens located in Jagodina, central Serbia. Disease severity (percentage diseased leaf area) was nearly 15% and the disease incidence was 70%. Symptoms were characterized as small, brown spots that first appeared on the leaf margin, spreading gradually to the interior of the leaf, forming irregularly shaped spots. Samples of symptomatic leaf tissues collected from diseased plants were immersed in a solution containing 1% sodium hypochlorite for 10 s, rinsed with sterilized water, and then cultured on potato dextrose agar (PDA) medium at 22°C for 7 days in the dark. In total, 14 isolates were collected. Mycelia were initially white, aerial, and gradually became gray 21 days later. Septate conidiophores were produced in cultures. Conidiophores, sprouted individually or in groups, were straight or flexuous, dendriform near the apex, gray or pale brown colored, and 9.0 to 13.0 × 945 to 2,415 (avg. 11.0 × 1,613) µm. Conidia were ovoid or elliptical, colorless, and 7.0 to 20.0 × 5.0 to 11.0 (avg. 11.5 × 7.4) µm. Numerous sclerotia were produced on PDA plates incubated for 20 days at 8°C. Sclerotia were dark, irregular, gathering as large irregular or globular groups, and measured 1.5 to 5.3 × 1.6 to 5.2 (avg. 3.07 × 2.97) mm. These morphological characteristics identified the fungus as *Botrytis cinerea* (Ellis and Waller 1974). To confirm identification, the internal transcribed spacer (ITS) region of rDNA (amplified by using ITS1/ITS4 primers) and nuclear protein-coding genes

(G3PDH, HSP60, and RPB2 amplified by using G3PDHf/G3PDHr, HSP60f/HSP60r, and RPB2f/RPB2r primers) of a representative isolate were sequenced. BLAST analysis of the resulting sequences (GenBank accession nos. KU216227, KX867996, KX867997, and KX867998) shared 100% sequence identity for ITS region, 99% sequence identity for G3PDH, and 100% sequence identity for HSP60 and RPB2 with gene sequences of *B. cinerea* (KP151609, KR055048, KU760985, and CP009818). A pathogenicity test was performed with all 14 isolates. Leaves of healthy, potted, 3-month-old *P. lactiflora* cv. Sarah Bernard were inoculated with 0.5 cm diameter PDA plugs containing mycelia and conidia and taken from 14-day-old cultures. Ten plants were inoculated with five plugs each and 10 control plants were inoculated with PDA alone. Plants were sprayed with sterilized water and then covered with transparent plastic bags for 5 days after inoculation and maintained in a greenhouse at 20 to 26°C, relative humidity 85%. The first lesions developed on leaves 5 days after inoculation and were similar to those observed on plants infected under natural conditions, whereas control plants were symptomless. The pathogen was successfully reisolated from all inoculated leaves and found to be morphologically identical to the original isolates, fulfilling Koch's postulates. No pathogens were isolated from control plants. Botrytis blight on *P. lactiflora* was previously reported in the United States (Daughtery et al. 1995), Iran (Mirzaei et al. 2008), China (Wang et al. 1996), and Chile (Munoz et al. 2016); however, to our knowledge, this is the first report in Serbia. The disease could cause considerable economic losses, and therefore control strategies should be implemented.

APS Publications

The American Phytopathological Society (APS)

3352 Sherman Court, Suite 202, St. Paul, MN 55121 USA

+1.651.454.7250

FAX +1.651.454.0766

APS