Journal of Plant Pathology (2023) 105:1715
https://doi.org/10.1007/s42161-023-01467-1

DISEASE NOTE

First report of powdery mildew caused by *Erysiphe deutziae* on *Deutzia parviflora* in Korea

Kui-Jae Lee[1] · In-Young Choi[2,3] · Lamiya Abasova[2] · Joon-Ho Choi[2] · Hyeon-Dong Shin[4]

Received: 23 April 2023 / Accepted: 19 July 2023 / Published online: 8 August 2023

Keywords ITS · LSU · Mongolian Deutzia

Deutzia parviflora Bunge (Hydrangeaceae), also called Mongolian Deutzia, is native to northern China and Korea. During summer and autumn of 2022, about three hundred *D. parviflora* of unknown cultivar planted as a flowering hedge shrub in a public garden in Wanju, Korea, were infected with powdery mildew. Although the disease incidence (number of shrubs infected) was nearly 100%, disease severity (number of leaves infected) was less than 5%. Two representative specimens were preserved in the herbarium of Korea University, Seoul, Korea (voucher nos. KUS-F33345 and F33555). Powdery mildew infection results in loss of aesthetics with reddish-brown discoloration on old leaves and white mycelial mats on young leaves and tender shoots. Conidiophores were cylindrical, 3–4-celled, 54–92 × 7–9 µm, and produced conidia singly. Conidia were ellipsoid to doliiform, 24–32 × 14–17 µm, and devoid of conspicuous fibrosin bodies. Chasmothecia were not found until early winter. These characteristics were consistent with the anamorph of *Erysiphe deutziae* (Bunkina) U. Braun & S. Takam. (Braun and Cook 2012). The nucleotide sequences of the internal transcribed spacer regions (ITS1 and ITS2) and the large subunit (LSU) of the rDNA gene were determined in this study according to Bradshaw and Tobin (2020) from KUS-F33555. The obtained sequences of the ITS and LSU were 100% identical to those of *E. deutziae* (MW600366, MW600367) in GenBank. The sequences of amplicons were subsequently deposited in GenBank (Accession Nos. OQ851757 for ITS, and OQ851758 for LSU). Although *E. deutziae* has been recorded on several *Deutzia* spp. in East Asia and Europe, to date *D. parviflora* has only been recorded as a host plant for this fungus in Russia (Braun and Cook 2012) and China (Nguyen et al. 2018). To our knowledge, this is the first report of *E. deutziae* on *D. parviflora* in Korea.

Acknowledgements This work was supported by the Korea Institute of Planning and Evaluation for Technology in Food, Agriculture, and Forestry (IPET), funded by the Ministry of Agriculture, Food and Rural Affairs (MAFRA) (Project No. 320043-05).

Declarations

Conflict of interest The authors declare no conflict of interest.

Informed consent The manuscript is new and not being considered elsewhere. All authors have approved the submission of this manuscript.

References

Bradshaw M, Tobin PC (2020) Sequencing herbarium specimens of a common detrimental plant disease (powdery mildew). Phytopathology 110:1248–1254. https://doi.org/10.1094/PHYTO-04-20-0139-PER

Braun U, Cook RTA (2012) Taxonomic manual of the *Erysiphales* (Powdery Mildews), CBS Biodiversity Series No. 11. CBS, Utrecht, Netherlands

Nguyen V, Guan G, Zhao F, Tang S, Li Y, Liu S (2018) *Erysiphe deutziae* causing powdery mildew on *Deutzia parviflora* var. *Amurensis* in China. Forest Pathol 48:e12454. https://doi.org/10.1111/efp.12454

✉ Hyeon-Dong Shin
hdshin@korea.ac.kr

[1] Division of Biotechnology, College of Environmental & Bioresources Sciences, Jeonbuk National University, Iksan 54596, Korea

[2] Department of Agricultural Biology, Jeonbuk National University, Jeonju 54896, Korea

[3] Plant Medicinal Research Center, Jeonbuk National University, Jeonju 54896, Korea

[4] Division of Environmental Science and Ecological Engineering, Korea University, Seoul 02841, Korea