First report of powdery mildew caused by *Erysiphe polygoni* on *Rumex japonicus* in Korea

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Rumex japonicus, although indigenous to East Asia, is regraded as a noxious weed in Korea. In June and November 2017, powdery mildew was found on several plants growing wild in Hoengseong (disease incidence 100%), and Mokpo (disease incidence 50%), respectively. Symptoms first appeared as white mycelia on the lower leaves, and subsequently the leaves turned yellow and necrotic, and withered. Two isolates were deposited in the Korea University herbarium (KUS-F29825 and F30382). Lobed appressoria on the hyphae were solitary or in pairs. Conidiophores ($n = 30$) were erect, 70 to 146×7 to $9 \mu\text{m}$, and composed of 3 to 4 cells. Foot-cells of conidiophores were cylindrical and $64 \mu\text{m}$ long. Singly formed conidia ($n = 30$) were cylindrical-oval to oblong, 26 to 50×14 to $24 \mu\text{m}$, and devoid of fibrosin bodies. Germ tubes arose from one end of the conidia. The morphological features of the fungus and the host genus are consistent with those of *Erysiphe polygoni* DC. (Braun and Cook 2012). Chasmothecia were not observed. To confirm the identification, the internal transcribed spacer (ITS) was amplified using the primer ITS1F and PM6, and PM3 and TW14 for the large subunit (LSU) of the rDNA. The resulting sequences were registered to GenBank (MT361079, MT361081 for ITS, MT361769 for LSU). A Blast'n search using the sequences showed > 99% similarities with *E. polygoni* (LC328322, AF011308, MG647828, KY660827 for ITS and LC328322 for LSU). Infection of *R. japonicus* by *E. polygoni* has been known in Japan and China (Farr and

Rossmann 2021). Although *E. polygoni* has been recorded on many host genera/species belonging to the Polygonaceae in Korea, this is the first report of *E. polygoni* on *R. japonicus*. Powdery mildew infections seem to suppress the growth and spread of this weed in natural habitat.

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Declarations

Conflict of interest The authors declare no conflict of interest.

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