First report of powdery mildew of *Sonchus oleraceus* caused by *Golovinomyces sonchicola* in Slovenia

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Received: 29 January 2019 / Accepted: 19 February 2019 / Published online: 7 March 2019
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Keywords Powdery mildew · *Sonchus oleraceus* · *Golovinomyces sonchicola* · Slovenia

Sonchus oleraceus L. is native to Europe and western Asia and has been invasive in many parts of the world. During the summer of 2017, powdery mildew symptoms were found on dozens of plants growing wild in disturbed areas in Idrija (46°00'14"N 14°01'36"E) and Ljubljana (46°03'21"N 14°29'39"E), Slovenia. Powdery mildew colonies first developed as circular to irregular white areas on both sides of the leaves and stems. Severe infections caused purplish discolorations on the adaxial leaf surface. Nipple-shaped appressoria were distinguished on the mycelium. Conidiophores were erect and were arising from the lateral part of hyphae, 90–260 × 10–12 µm, and producing 2 to 6 immature conidia in chains with a sinuate outline. Conidia were hyaline, ellipsoid to cylindric-oval, 32–45 × 16–23 µm, and lacking distinct fibrosin bodies. At the perihilar position of conidia germ tubes were produced. Chasmothecia were not observed during our survey. To perform molecular identification, genomic DNA was extracted from KUS-F29976 and KUS-F29982 and the primers ITS1/ITS4 were used to amplify the internal transcribed spacer (ITS) region of rDNA and sequenced. The resulting 730 and 734 bp sequences were deposited in GenBank (accession Nos. MK318522 and MK318523). A BLAST search against GenBank revealed 99% similarity to the ITS sequences of *Golovinomyces sonchicola* from UK (KY660944 ex *Sonchus oleraceus*) and of *Golovinomyces cichoracearum* from US (HM449077 ex *Sonchus* sp.) and

from UK (*Sonchus oleraceus* ex *Sonchus oleraceus*). Based on molecular analysis and morphological characteristics, the fungus was identified as *G. sonchicola* U. Braun & R.T.A. Cook (Braun and Cook 2012). *Sonchus oleraceus* has been recorded as host plant of *G. sonchicola* (formerly as *G. cichoracearum* in a broad sense) in North America, Asia, Africa, and many parts of Europe, but not in Slovenia (Farr and Rossman 2019). To our knowledge, this is the first report of powdery mildew caused by *G. sonchicola* on *S. oleraceus* in Slovenia. Voucher specimens are available in the phytopathological herbarium of the Slovenian Institute of Hop Research and Brewing (IHPS-F52 and IHPS-F53), and in the Korea University herbarium (KUS-F29976 and KUS-F29982).

Acknowledgements The authors acknowledge the financial support of the Slovenian Research Agency (ARRS program no. P4-0077).

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