First report of powdery mildew of *Origanum onites* caused by *Golovinomyces biocellatus* in Turkey

Güliz Tepedelen Ağaner¹ · Ceren Cer¹ · Barbaros Çetinel¹

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Origanum onites L. (pot marjoram), Lamiaceae, is used for its aromatic and medicinal properties. Powdery mildew symptoms were observed in Spring 2014, in the Denizli province. Disease incidence was approximately 73%. Both adaxial and abaxial leaf surfaces were covered with white mycelium and conidia. Mycelium was also seen growing on the stem surface. As the disease progressed, infected leaves turned yellow, and eventually fell off. Conidia were elliptical, hyaline and measured $34.5 \times 18.1 \mu\text{m}$, while conidiophores were erect and measured $78.7 \times 9.0 \mu\text{m}$. Chasmothecia were not detected and fibrosin bodies were absent. Based on anamorph, morphology, the fungus was identified as *Golovinomyces biocellatus* (Ehrenb) V.P.Heluta (Braun 1987). The internal transcribed spacer (ITS) region of rDNA was amplified using the primers ITS1/ITS4 and sequenced (White et al. 1990) (GenBank Accession No. KU642024). The 560-bp amplicon obtained by PCR reaction was sequenced and showed 100% similarity to *G. biocellatus* (JN594608.1). For pathogenicity tests, a conidial suspension (6×10^4 CFU/ml) was prepared from leaves of diseased pot marjoram plant and inoculated onto leaves of five plants while the same number of non-inoculated plants served as a control. Inoculated and control plants were covered with plastic bags and incubated in 70–

80% humidity chamber for two days at 24 °C. They were left to grow normally. First symptoms appeared in ten days after inoculation but they did not appear on control plants.

Golovinomyces biocellatus on *O. vulgare* has been reported in Italy, Argentina and it has been reported on rosemary plants in Turkey (Farr and Rossman 2020). However, there is no record of powdery mildew on *O. onites*.

To our knowledge, this is the first report of *G. biocellatus* on *O. onites* in Turkey.

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✉ Güliz Tepedelen Ağaner
glztpdln@hotmail.com

¹ Plant Protection Research Institute-Bornova, Izmir, Turkey