



# First report of powdery mildew caused by *Podosphaera xanthii* on okra in Türkiye

Soner Soylu<sup>1</sup> · Merve Kara<sup>1</sup> · Emine Mine Soylu<sup>1</sup> · Aysun Uysal<sup>2</sup> · Şener Kurt<sup>1</sup>

Received: 11 April 2023 / Accepted: 22 June 2023 / Published online: 4 July 2023  
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**Keywords** *Podosphaera xanthii* · *Abelmoschus esculentus* · Powdery mildew · ITS

Okra (*Abelmoschus esculentus* (L.) Moench) is an annual vegetable crop grown worldwide. In July 2021, symptoms of powdery mildew were observed on 85–90% of okra (cv. sultani) plants in 35 fields (16.5 ha) in several districts of Hatay Province, Türkiye. White epiphytic mycelia and conidia were present on almost all okra leaves and fruits. Voucher specimens were deposited in the HMKU herbarium (MKUBK-BPM4-14). Conidia were hyaline, ellipsoid-ovoid to barrel-shaped, with well-defined fibrosin bodies, and measured 26.5–35.0 × 17.0–20.0 µm with a length/width ratio 1.5–2.0. Conidiophores were straight, 110–245 × 10–14 µm, and produced 4–6 immature conidia in chains with crenate edges. No chasmothecia were formed on heavily infected leaves. The morphological features of the asexual structures resembled those of the genus *Podosphaera* (Braun and Cook 2012). The ITS regions of rDNA from four representative isolates (BPM4,7,12,14) were amplified with primers ITS5/P3 (Kusaba and Tsuge 1995) and sequenced directly. BLASTn analysis of the 608 bp (OQ729722, OQ729740, OQ729746, OQ729809 for ITS5/P3) amplicons exhibited 99.65–100% sequence identity with the sequences of *P. xanthii* isolates from okra (MH824669, MG754404), melon (MG719984), *Zinnia elegans* (MT131261), and *Vigna angularis* (MG928388.1) from different Countries. The fungal species was identified as *Podosphaera xanthii* (Castagne) U. Braun & Shishkoff based on morphological characteristics and molecular analysis (Braun and Cook 2012). Pathogenicity was confirmed by inoculation by dusting fresh conidia from diseased leaves onto leaves of 4-week-old potted okra seedlings (cv. sultani).

Five non-inoculated plants served as controls. The inoculated and non-inoculated plants were maintained in two separate growth chambers at 26 ± 2°C (>80% humidity). After 7 days, inoculated leaves showed typical symptoms similar to those of naturally infected plants. Non-inoculated plants remained symptomless. Powdery mildew on okra caused by *P. xanthii* is known worldwide but not in Türkiye (Farr and Rossman 2022). To our knowledge, this is the first report of powdery mildew on okra plants caused by *P. xanthii* in Türkiye.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s42161-023-01453-7>.

## Declarations

**Research involving human participants and/or animals** This article does not contain any studies with human participants or animals performed by any authors.

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

**Conflict of interest** The authors declares that there is no conflict of interest for this submission.

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✉ Soner Soylu  
soylu@mku.edu.tr

<sup>1</sup> Department of Plant Protection, Hatay Mustafa Kemal University, Faculty of Agriculture, Hatay 31034, Turkey

<sup>2</sup> Centre for Implementation and Research of Plant Health Clinic, Hatay Mustafa Kemal University, Hatay 31034, Turkey