



First report of powdery mildew caused by *Podosphaera xanthii* on round zucchini in Pakistan

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Zucchini (*Cucurbita pepo*) is a high value vegetable summer crop in Pakistan. In April 2020, early disease symptoms were observed on mature shady leaves of zucchini plants in different fields of Taxila District (Punjab, Pakistan) as small circular or irregular white colonies on both upper and lower leaf surfaces. As the disease progressed, whole leaves, petioles and stems were covered with white fungal mycelia resulting in chlorosis and withering. Morphological analysis of fungal mass showed septate, branched hyphae. Conidiophores were catenated, unbranched, erect forming straight chains. The length and width of conidiophores were 43.5–84 × 10–17.5 µm, respectively. Conidia were ellipsoid-ovoid to doliform, with shredded glass like fibrosin bodies (Takikawa et al. 2015). The average length and width of conidia was 28–40 × 18.5–22 µm, respectively. Mostly, conidia were seen along with erect to bifurcating germ tube. Teleomorph stage was not found during the growth season. The morphological characters suggested this fungus likely to be *Podosphaera xanthii* (Braun and Cook 2012; Miazzi et al. 2011). For confirmation, the fungal DNA was extracted and amplified using primers S1 (5'- GGATCATTA CTG AGCGCGAGGCCCG-3')/S2 (5'- CGCCGCCCT GGCGGAGATACA -3'). The sequence was submitted to GenBank (OL377733). BLAST analysis of this amplicon revealed 100% sequence identity with a *P. xanthii* strain (MT250855) from *Cucurbita pepo*. Pathogenicity was determined by inoculating young leaves of five healthy potted zucchini plants with conidial suspension (10⁵ conidia ml⁻¹). Five uninoculated plants served as control. The inoculated

and uninoculated plants were placed in separate growth chamber at 25–28 °C (> 80% humidity) to avoid transfer of inoculum on control plants. Symptoms appeared 5–7 days after inoculation on inoculated plants were similar to those observed on naturally infected plants. The control plants however, remained healthy. To our knowledge, this is the first report on the occurrence of *P. xanthii* on zucchini plants in Taxila District (Punjab, Pakistan).

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s42161-022-01174-3>.

Data availability statement The data regarding the current study is available from the corresponding author on reasonable request.

Declarations

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

Research involving human participants and/or animals This article does not contain studies with human participants or animals.

Conflict of interest The authors declare no conflict of interest.

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