



First report of pistachio dieback and canker caused by *Fusarium proliferatum* in Turkey

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In 2022 spring season, canker symptoms were observed on about 5% of pistachio (*Pistacia vera* L. cv. Siirt) trees in a 25 decares commercial orchard in Adıyaman province (37°30'24.0"N, 38°13'47.9"E), Turkey. Diseased trees showed symptoms of yellowing, branch and scaffold dieback, dark wood discoloration and stem canker. Infected wood tissues of four trees were surface sterilized in 1% sodium hypochlorite for 2 min, placed onto potato dextrose agar (PDA) and incubated in dark at 23 °C. All pieces of diseased trees consistently developed the same fungal colonies, morphologically similar to *Fusarium* spp. Cultures showed a white to dark purple in colour, macroconidia (3.8 to 4.9 × 27.7 to 39.8 µm) were thin-walled, slender, relatively straight, with 3 to 5 septate, and microconidia (2.7 to 3.6 × 5.4 to 8.2) were abundant, single celled, club shaped, and formed in chains and false heads from monophialides and polyphialides. Chlamydospores were absent. The cultures were identified as *Fusarium proliferatum* based on morphological characteristics (Leslie and Summerell 2006). To confirm morphological identification, the RNA polymerase II subunit 2 (RPB2) and translation elongation factor 1-α (EF1-α) gene regions of a representative isolate were sequenced (Liu et al. 1999; Geiser et al. 2004) and deposited in GenBank (Accession Nos. RPB2: OP994350, EF1-α: OP994348). Blastn analysis suggested 100% similarity with *F. proliferatum* strain CBS 131,574 (RPB2: JX162527,

EF1-α: JX118983). Phylogenetic analysis with concatenated sequences further confirmed the identification. To fulfill Koch's postulates, six branch segments from cv. Siirt were wounded with a cork borer 5 mm and inoculated by a mycelial plug of the same size with from actively growing fungus colony margins. Inoculated branches were wrapped with parafilm and incubated at 25 °C in moist chambers. Controls branches were inoculated with sterile PDA plugs. After 5 weeks of incubation dark-brown necrotic lesions appeared on inoculation point of branch segments, while control plants remained symptomless. The pathogen was re-isolated and confirmed morphologically. To our knowledge, this is the first report of pistachio dieback and canker caused by *F. proliferatum* in Turkey.

Declarations

Ethical statement This article does not contain any studies with human participants or animals.

Conflict of interest All authors declare that they have no conflict of interests.

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