



First report of charcoal disease caused by *Biscogniauxia mediterranea* on *Olea europaea* in Tunisia

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In March 2016, extensive decline of olive trees (*Olea europaea* L.) was recorded in the region of El-Awabed (Sfax, Southern Tunisia) and spread over 20 ha causing around 10% disease incidence. This disease affected the trunk and the leaves leading to the development of lengthwise bark cracks, detached bark, withering of the crown, and extensive microphyllia. In July 2016, black applanate stromata and fruiting bodies emerged in the trunks of the trees and were recognized as *Biscogniauxia mediterranea* (De Not.) O. Kuntze, a fungus causing charcoal canker in several plant species. Colonies grown on PDA were grey and black on the underside (Jurc and Ogris 2006). The stromata were applanate, ellipsoid, and elongate, 8.5 to 21.6 × 3.7 to 4.75 cm. The perithecia were ovoid to tubular, 0.81 to 0.85 × 0.15 to 0.18 mm. The ascospores were ovoid, brownish-black, measuring 6.7 to 8.7 × 13.9 to 20.2 μm. Traditional identification was further confirmed by sequencing of the rDNA-ITS and the β-tubulin gene. BLAST searches of ITS (KY275264.1) and β-tubulin (KY275263.1) sequences revealed 98 to 100% identity to *B. mediterranea*. Pathogenicity test was performed under greenhouse conditions, by injecting 27 olive plants with a 1 × 10⁻⁶ mL ascospore suspension at the trunk junction. Forty-five days after inoculation, 17 plants showed a detached bark, while control plants remained healthy. At the end of the experiment, the fungus was successfully reisolated from the lesions of 11 symptomatic plants, which fulfill the Koch's postulates.

Biscogniauxia mediterranea was recently reported on *Erica multiflora* L. in Tunisia as well as on other plant hosts in different countries (e.g. *Quercus cerris* L. and *Q. pubescens* Willd) (Ragazzi et al. 2012; Yangui et al. 2019). Most recently, *B. mediterranea* has also been reported as endophyte on *O. europaea* in Portugal (Materatski et al. 2019). To our knowledge this is the first report of this fungus causing disease on olive trees in Tunisia and worldwide.

Compliance with ethical standards

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

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