First report of branch blight of almond trees caused by *Nothophoma quercina* in Tunisia

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Received: 19 February 2019 / Accepted: 3 June 2019 / Published online: 18 June 2019
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Keywords *Nothophoma quercina* · Branch blight · *Prunus dulcis*

Shoot blight disease of almond trees [*Prunus dulcis* (Mill.) D.A. Webb] was recorded in the region of Sfax (Southern Tunisia). In early spring, 30 orchards showed symptoms of wilting and death of leaves and blossoms on new shoots (10% disease incidence). Blighted shoots exhibited diffuse cankers with severe gummosis on the buds and pycnidia growing within the bark. Isolation of the pathogen was performed by plating 25 infected leaves and wood samples on Potato Dextrose Agar (PDA) after superficial disinfection with sodium hypochlorite (3%) for 5 min and ethanol for 30 s. After 5 days at 23 °C, colonies producing pycnidia with dark-brown mycelium were grown from most of the plated samples (Jianyu et al. 2016). Pycnidia were black, broadly globose to irregular and 115–215 µm × 126–223 µm. Conidia were hyaline, smooth- and thin-walled, aseptate, and mostly ovoid-ellipsoidal, and 2.85 to 5.55 × 2.15 to 5.75 µm. Based on macro- and micro-morphological features, colonies were identified as *Nothophoma quercina* (Syd.) Q. Chen & L. Cai (Chen et al. 2015). To confirm the identification, the Internal Transcribed Spacer (ITS) and the β-tubulin genes were amplified and sequenced using the primer pairs ITS1/ITS4 and Bt2a/Bt2b, respectively. BLAST searches of the ITS-rDNA (MK522080) and β-tubulin (MK522081) sequences revealed 99.58% and 99.70% identity to *N. quercina*, respectively.

Pathogenicity test was performed on 20 cm detached shoots collected from healthy almond trees, aseptically wounded and inoculated with mycelial plugs. Control shoots were inoculated with sterile agar plugs. Inoculated shoots were placed in polyethylene boxes and incubated at 23 °C for 30 days. While mock-infected shoots remained healthy, brown lesions appeared on inoculated shoots ranging from 0.8 mm to 15 mm, with a mean extension of 10 mm. Pycnidia were observed within the bark of infected shoots. The pathogen was re-isolated from inoculated shoots, fulfilling Koch's postulates. *N. quercina* was previously reported on *Olea europaea* L. in Tunisia as well as on other plant hosts in different countries (e.g. *Malus micromalus* and *Chaenomeles sinensis*) (Farr and Rossman 2019). To our knowledge, this is the first report of this pathogen on almond trees in Tunisia and in the world.

Compliance with ethical standards

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

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Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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