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DISEASE NOTE

First report of *Neofusicoccum cryptoaustrale* associated with branch dieback and stem canker on *Juglans regia* in Turkey

Zühtü Polat[1] · Mehmet Akif Gültekin[1] · Gülsüm Palacıoğlu[2] · Harun Bayraktar[3]

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English walnut (*Juglans regia* L.) is an important fruit tree in Turkey. In June 2021, symptoms of stem canker, branches dieback and vascular discoloration were observed on 4% of 250 trees of the walnut cultivar Fernor surveyed in an orchard (40°39'36.0"N, 29°17'34.5"E) of Yalova province, Turkey. Symptomatic wood tissues were surface-disinfected in 1% sodium hypochlorite for 2 min and plated on potato dextrose agar (PDA). Petri dishes were incubated at 23°C in the dark. Fungal colonies were initially white with fluffy aerial mycelium, turning olive-grey. Pycnidia produced on pine needles were black, solitary, semi-immersed, papillate, and up to 520 µm diam. Conidiogenous cells were holoblastic, hyaline, cylindrical, 12.3×2.5 µm. Conidia were hyaline, smooth, aseptate, fusiform, apices rounded and measured 17.7–24.3×4.7–5.8 µm, mean 19.6×5.2 µm. These morphological characteristics were similar to the description of *Neofusicoccum cryptoaustrale* Pavlic, Maleme, Slippers & M.J. Wingf. (Crous et al. 2013). To confirm the morphological identification, the internal transcribed spacer (ITS), translation elongation factor 1-α (EF1-α) and β-tubulin genes of the representative isolate Wn-4 were sequenced using the primers ITS1/4, EF1-728 F/986R and Bt2a/Bt2b. The sequences were deposited in GenBank (accession Nos. ITS: OM185304, EF1-α: OM222704 and β-tubulin: OM222705). The sequences showed 99.8%, 100% and 99.74% identity with *N. cryptoaustrale* CBS122813 (ITS: FJ752742, EF1-α: FJ752713, β-tubulin: FJ752756), respectively. Phylogenetic analysis of three genes with the neighbor-joining showed the close genetic relationship with *N. cryptoaustrale*. The isolate was deposited in Ankara University Culture Collection with accession number AUZF-1078. To fulfil Koch's postulates, six branch segments at 30 cm in length were surface-disinfected with 70% ethanol and wounded with 4 mm cork borer. Single mycelia plugs from a fresh culture were inserted into the wounded stems. The inoculation points were sealed with Parafilm and branch segments were incubated at 23ºC in moist chambers. Controls were inoculated with sterile PDA plugs. After one month, dark brown necrotic lesions were observed on inoculation sites and the pathogen was successfully reisolated from necrotic tissues. No lesions developed in control stems. To our knowledge, this is the first report of *N. cryptoaustrale* associated with stem canker and dieback on walnut not only in Turkey but worldwide (Farr and Rossman 2022).

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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✉ Harun Bayraktar
bayrakta@agri.ankara.edu.tr

[1] Atatürk Central Horticultural Research Institute, 77102 Yalova, Turkey

[2] Department of Plant Protection, Faculty of Agriculture, Şırnak University, Şırnak, Turkey

[3] Department of Plant Protection, Faculty of Agriculture, Ankara University, 06110 Ankara, Turkey