

DISEASE NOTE

FIRST REPORT OF *FUSARIUM OXYSPORUM* CAUSING LEAF BLIGHT ON *RHEUM AUSTRALE*

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Rheum (*Rheum australe*, family Polygonaceae), a rhizomatous perennial herb with potential medicinal value, is a rare and endangered species distributed in the Himalayas at an elevation of 2000-4500 m above sea level (asl) (Chauhan, 1999). In November 2011, a disease observed during domestication at Palampur (ca. 1300 asl) was characterized by pinkish spots on the leaves that gradually coalesced into large lesions affecting the entire blade, which turned yellowish-brown and withered. A fungus, consistently isolated from diseased leaves on potato dextrose agar (PDA) had a purple-coloured aerial mycelium growing rapidly at 28±2°C. Conidiophores were unbranched with branched monophialides, microconidia were abundant, generally single-celled, oval- to kidney-shaped, produced in false heads. Macroconidia were slightly sickle-shaped, thin-walled and delicate, while chlamydospores were 1-2 celled. These morphological traits identified the fungus as *Fusarium oxysporum* (Nelson *et al.*, 1983). This was confirmed by PCR amplification and sequencing of the internal transcribed spacer (ITS) region (GenBank accession No. KF986647) that showed 99% similarity with a *F. oxysporum* isolate from ginger (KJ938022). Pathogenicity tests were done twice in a screenhouse by spraying a conidial suspension (1×10^6 conidia ml⁻¹ in sterile tap water) from a 7-day-old culture onto the leaves of 10-month-old plants. Inoculated plants and water-sprayed controls were kept in a growth chamber at 20°C for 48-72 h. Symptoms appeared 8-10 days post inoculation on the leaves, from which pathogen was reisolated thus fulfilling Koch's postulates. Control plants remained symptomless. The culture has been deposited in the Microbial Type Culture Collection (MTCC 11222) of the Institute of Microbial Technology, Chandigarh, India. To the best of our knowledge, this is the first record of *F. oxysporum* on *R. australe*.

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DISEASE NOTE

FIRST REPORT OF DIEBACK OF OLIVE TREES CAUSED BY *NEOFUSICOCCUM AUSTRALE* IN TUNISIA

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In spring 2011, a severe disease resulting in tree dieback of olive tree cv. Chemlali was observed in an orchard in Hencha (south-east Tunisia). Symptomatic trees exhibited plenty of dead twigs and wilted leaves. On potato dextrose agar (PDA), a fungus isolated from symptomatic twigs and branches has an initially white mycelium that turned glaucous grey to greenish grey on the upper surface. The fungus was identified as *Neofusicoccum australe*, based on morphological characteristics and analysis of the ITS gene region (White *et al.*, 1990). The sequence analysis of ITS region of the isolate revealed 100% homology with a reference sequence of *N. australe* (Strain E54 ML, GenBank accession No. KF702388.1). Pathogenicity tests were conducted on 10 two-year-old olive trees of cv. Chemlali. A mycelial plug was put in a shallow wound on the stem of each plant. Control plants were inoculated with sterile PDA plugs. All plants were kept in a greenhouse. Two months post inoculation, symptoms appeared with stems showing brown color. No symptoms developed on the control plants. *Neofusicoccum* was isolated from inoculated stems, thus fulfilling Koch's postulates. *N. australe* has been reported as responsible for cordon grapevine dieback in Italy (Linaldeddu *et al.*, 2010). To the best of our knowledge, this is the first report of *N. australe* as a causal agent of dieback of olive trees in Tunisia.

Linaldeddu B.T., Scanu B., Schiaffino A., Serra S., 2010. First report of *Neofusicoccum australe* associated with grapevine cordon dieback in Italy. *Phytopathologia Mediterranea* **49**: 417-420.

White T.T., Bruns T., Lee S., Taylor J., 1990. Amplification and direct sequencing of fungal ribosomal RNA genes for phylogenetics. In: Innis M.A., Gelfand D.H., Sninsky J.J., White T.J. (eds). PCR protocols. A guide for Methods and Application, pp. 315-322. Academic Press, San Diego, CA, USA.

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