

DISEASE NOTE

FIRST REPORT OF *CURVULARIA LUNATA* var. *AERIA* CAUSING LEAF BLIGHT ON TOMATO IN PAKISTAN

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Tomato plants showing the symptoms of leaf blight were observed in March 2015 in the tunnels on the premises of the University of the Punjab, Lahore, Pakistan. Initial symptoms were water-soaked flecks of brown color, which coalesced later to form dark brown lesions. Diseased leaves were collected and a fungus was isolated on potato dextrose agar (PDA) plates incubated at $25 \pm 2^\circ\text{C}$. Fungal colonies were dark brown, and usually zonate. Conidia were ellipsoidal, smooth, 3-septate, with middle cells broader and darker than two end cells and had a size of $18\text{-}32 \times 8\text{-}16 \mu\text{m}$. Conidiophores were septate, pale brown, smooth, and up to $800 \mu\text{m}$ long (Ellis, 1971). Total DNA was isolated from the mycelium and the internally transcribed spacer (ITS) region was amplified (White *et al.*, 1990) and sequenced (GenBank accession No. LN879930). BLAST analysis of the fungal sequence showed 100% nucleotide similarity with *Curvularia aeria* accession Nos. KP340067.1, KP340066.1, KP131919.1, and EU680523.1. Based on its morphological and molecular features, the fungus was identified as *Curvularia lunata* var. *aeria* (Bat.) M.B. Ellis. *C. lunata* var. *aeria* is a taxon accepted as a variety of *C. lunata*, which is distinguished from *C. lunata* var. *lunata* because of the faster and floccose mycelial growth. Pathogenicity was assessed by reproduction of symptoms on inoculated healthy plants, which fulfilled Koch's postulates. To our knowledge, this is the first report of the presence of *C. aeria* on tomato in Pakistan.

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FIRST REPORT OF *PENICILLIUM GRISEOFULVUM* CAUSING LEAF BLIGHT ON *RHEUM AUSTRALE*

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Rheum (*Rheum australe*, family Polygonaceae), a rhizomatous perennial herb with medicinal properties, is a rare and endangered species distributed in the Himalayas at an elevation of 2000-4500 m above sea level (asl). In November 2011, a disease observed during domestication at Palampur, India (ca. 1300 m asl), was characterized by irregular light-brown lesions on the leaves that gradually coalesced into larger blotches affecting the entire blade, which turned dark-brown and withered. Disease symptoms were outstanding during November-February, when the climate is cool ($15\text{-}20^\circ\text{C}$) and were less prominent towards the end of March. A *Penicillium* sp. was consistently isolated when fragments from diseased leaves were surface-sterilised (2% sodium hypochlorite), and plated on potato dextrose agar (PDA). Colonies of single-spore isolates reached up to 8.0 cm diameter in 5 days at $28 \pm 2^\circ\text{C}$, were radially sulcate, often umbonate with usually deep margins, had terverticillate penicillia, with 4-7 phialides per verticil, bearing smooth-walled, ellipsoidal to subsphaeroidal conidia (Frisvad and Samson, 2004). The rDNA ITS was sequenced (GenBank accession No. KJ175262) and found identical (99%) to sequences of *Penicillium griseofulvum* isolates. Pathogenicity tests were done twice in a greenhouse by spraying a conidial suspension (1×10^6 conidia ml^{-1} in sterile tap water), obtained from 7-day-old cultures onto the healthy leaves of 10-month-old Rheum 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 the pathogen was reisolated, fulfilling Koch's postulates. Control plants did not exhibit symptoms. *P. griseofulvum* has been reported as post-harvest pathogen (Spadaro *et al.*, 2011). To our knowledge, this is the first record of *P. griseofulvum* on *R. australe* worldwide.

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