



The first report of tomato foot rot caused by *Rhizoctonia solani* AG-3 PT from Pakistan

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Rhizoctonia solani is an important soil-borne fungal pathogen, which infects tomato (*Lycopersicon esculentum* L.) with typical symptoms of seedling damping-off and foot rot. During surveys (2015 and 2016 crop season) of nine tomato growing areas in Pothwar, symptoms of foot rot were noted with approximately 37% disease incidence. Lesions on infected plant stems were irregular in shape, water-soaked, brown, and had a sunken appearance. A total of 39 diseased plant samples were collected. Eleven fungal isolates recovered from stem portions of the diseased plants on malt extract agar (MEA) medium were light grey to brown in color with plenty of mycelial growth and branched hyphae. A septum was always present in the branch of hyphae near the originating point with a slight constriction at the branch. All isolates were multinucleate when subjected to DAPI (4',6-diamidino-2-phenylindole) staining. Based on morphological characteristics of fungal hyphae (Ogoshi 1975), isolates were identified as *Rhizoctonia solani*. Restriction analysis of PCR-amplified ribosomal DNA with four discriminant enzymes (*Mse*I, *Ava*II, *Hinc*II and *Mun*I) (Guillemaut et al. 2003) and hyphal interactions with tester strains of AG-3 (Carling 1996) confirmed these isolates belong to AG-3 PT. The ITS region of rDNA amplified with the primers ITS1/ITS4 was sequenced (GenBank Accession Nos. MG548647 and MG548648) and had 100% identity with the corresponding gene sequence of *R. solani* AG-3 PT (KP013070). Four-week-old tomato plants

(cv. 'Money Maker') were transplanted in 1.5 L plastic pots containing sterilized potting mixture. Inoculum containing 10 g of barley grains colonized with each *R. solani* isolates for 14 days was mixed in the upper 2 cm layer of soil (Taheri and Tarighi 2012). A set of uninoculated plants was used as control. Ambient conditions were provided under greenhouse. Twenty-one days after inoculation, all inoculated plants showed lesions similar to those observed in the field while control plants remained symptomless. Fungus reisolated from artificially inoculated plants was confirmed as *R. solani*. The present study is the first report of *R. solani* AG-3 PT infection on tomato from Pakistan which will be useful to breeding programs working on varietal evaluation.

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