First report of crown and stem rot of tomatoes (*Solanum lycopersicum* L.) caused by *Fusarium solani* in India

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In February 2018, crown and stem rot symptoms were observed on tomato plants in an experimental field of ICAR-Indian Agricultural Research Institute, New Delhi (India) which had 20% disease incidence. Symptomatic plants exhibited dark brown lesions at the collar region and brown discoloration of the pith followed by wilting and finally, plants died within few weeks. The crown tissues of symptomatic plants surface sterilized in 2.5% sodium hypochlorite solution and the rhizospheric soils (soil dilution plate method) were placed on potato dextrose agar (PDA) for isolation and purification. Later, carnation leaf agar (CLA) was used for the morphological characterization of ten isolates which showed cottony white colony with falciform 4–5 septate macroconidia ($39.5\text{--}31.4 \times 5.92\text{--}5.02\text{ }\mu\text{m}$) and 0–1 septate microconidia ($11\text{--}7.7 \times 5.3\text{--}3.9\text{ }\mu\text{m}$) (Lopez- Lopez et al. 2021). Molecular identification was done based on translation elongation factor 1 α (tef1) and Internal Transcribed Spacer (ITS) regions of two representative isolates (GenBank accession Nos. MT721131, MW886318-tef1 and MT812675, MW879338-ITS) (O'Donnell et al. 2000; White et al. 1990). The sequences showed 99% sequence homology with *Fusarium solani* and this classification was confirmed by a phylogenetic analysis based on concatenated ITS and tef1 sequences. A pathogenicity test was conducted on ten one-month-old healthy seedlings by soaking the roots on a spore suspension (10^6 spore mL⁻¹) for 8 h and then transplanted, which were kept in the greenhouse at 25 ± 2 °C for 21 days. Three seedlings were inoculated separately with sterile water as control. After 14 days all the inoculated plants

showed crown and stem rot symptoms similar to those observed in the field. The same fungus was re-isolated from the inoculated plants. No symptoms were observed on control plants. The established cultures were deposited in the Indian Type Culture Collection, Division of Plant Pathology, ICAR-Indian Agricultural Research Institute, New Delhi, India (ITCC No. 7803, 8942). *Fusarium solani* has been previously reported to cause tomato crown and stem rot disease in Canada, the United States and Mexico (Lopez- Lopez et al. 2021). To the best of our knowledge, this is the first report of *Fusarium solani* infecting tomato plants in India.

Supplementary information The online version contains supplementary material available at <https://doi.org/10.1007/s42161-021-00938-7>.

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