

Research Article

Variability Studies in Chickpea Wilt Caused by *Fusarium oxysporum* f. sp. *ciceris*

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Abstract

Fusarium wilt (*Fusarium oxysporum* f. sp. *ciceris*) of chickpea remains a persistent threat, leading to substantial losses in Telangana. The cultural, morphological and molecular variations were studied on fourteen isolates of *Fusarium* recovered from affected chickpea plants. *Fusarium* was identified based on the cultural characteristics varied significantly in colour, growth pattern on Potato Dextrose Agar medium were observed. The microscopic examinations, which focused on the morphology of macroconidia, microconidia and chlamydospores identified through a single sporulation method. Further the isolates were molecularly identified by using ITS1 and ITS4 gene, which is crucial for accurately deciphering the diversity within the pathogen, aiding in the development of resistant chickpea cultivars. Isolate Foc-7 exhibited the greatest radial growth (87.97 mm) whereas Foc-2 displayed the least growth (46.10 mm). The size of microconidia, macroconidia and chlamydospores of Foc-7 measured 9.88×2.20 µm, 20.97×3.97 µm and 9.42 µm respectively whereas 6.77×3.44 µm, 17.92×4.22 µm and 8.42 µm of respective spore size was recorded in Foc-2 isolate. These fourteen isolates were identified by employing Internal Transcribed Spacer gene and submitted to NCBI for molecular confirmation of Foc and the results concurred with the findings. Consequently, it is essential to explore effective management strategies to address this issue.

Key words: Characterization, *Cicer arietinum*, *Fusarium*, internal transcribed spacer (ITS), phylogenetic tree

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