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Research Article

Evaluation of Native Isolates of *Trichoderma* spp. for Sustainable Management of Fusarium Wilt of Chickpea

Deepak Kumari[1], NK Yadav[1], Prakash Banakar, Kishor Chand Kumhar[1], Garima[1] and Mahendra Kumar Saran[1]

[1]Department of Plant Pathology, CCS Haryana Agricultural University, Hisar, Haryana-125 004 India; [2]Department of Nematology, CCS Haryana Agricultural University, Hisar, Haryana-125 004 India Email- yadavnk67@gmail.com

Abstract

Chickpea (*Cicer arietinum* L.) is the third most essential pulse crop. Among all biotic and abiotic stresses, chickpea wilt incited by *Fusarium oxysporum* f. sp. *ciceris* is one of the most destructive seed and soil-borne disease that appear yearly and cause heavy yield losses. Management of chickpea wilt using *Trichoderma* spp. will be of great importance as it is eco-friendly and economical. Hence, the present study was carried out to decipher the biocontrol potential of a native isolates of *Trichoderma* spp. for sustainable management of Fusarium wilt of chickpea. Our quest ascertained that among all thirteen native *Trichoderma* isolates, which were isolated from chickpea fields from different districts of Haryana, isolate HST-1 (*Trichoderma asperellum*) exhibited maximum mycelial growth inhibition up to 88.1 per cent. *In vivo,* results showed that seed treatment with *T. asperellum* (HST-1) (liquid formulations @ 5 ml kg^{-1}) recorded the lowest disease incidence of 17.26 per cent with minimum pre and post-emergence seedling mortality and maximum plant growth matrices *viz.,* plant height, root length, fresh weight, dry weight, pre and post-emergence seedling mortality and germination percentage as compared to control. The present study demonstrated that applying the native isolate of *T. asperellum* (HST-1) liquid formulation was adequate for the sustainable management of the Fusarium wilt of chickpea. The study also suggested that liquid formulations were more effective than wettable powder formulations of *Trichoderma* spp.

Key words: *Cicer arietinum*, *Fusarium oxysporum* f. sp. *ciceris*, liquid formulations, *Trichoderma asperellum*, wettable powder

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