

Management of Fusarium wilt of tomato by bioagents, fungicides and varietal resistance

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ABSTRACT

Tomato wilt caused by *Fusarium oxysporum* f.sp. *lycopersici* is most important and destructive disease of tomato in Maharashtra, which causes considerable losses in yield of tomato. Therefore, present studies were undertaken to test the efficacy of eight fungicides and six bioagents *in vitro* and ten varieties of tomato in green house against Fusarium wilt of tomato. Among the eight fungicides, Mancozeb + Carbendazim (0.125 + 0.05 %) had completely checked the growth of pathogen which inhibited 100 per cent growth of *Fusarium oxysporum* f.sp. *lycopersici* followed by Thiram + Carbendazim (0.15 + 0.05 %), Carbendazim (0.1 %), Thiram (0.3 %), Carboxin (0.2 %), Captan (0.25 %), Propiconazole (0.2 %), Mancozeb (0.25 %) with 93.75, 92.50, 90.00, 87.50, 81.25, 67.50 and 62.50 per cent growth inhibition over control, respectively. *In vitro*, the antagonistic effect of four species of *Trichoderma* and two bacterial bioagents were tested against this pathogen. Among the four *Trichoderma* species tested, *Trichoderma viride* recorded highest growth inhibition (85.00 %) of *Fusarium oxysporum* f.sp. *lycopersici* followed by *T. harzianum*, *T. hamatum*, *T. koningii* with 72.50, 70.00, 61.12 per cent growth inhibition over control, respectively and among two bacterial bioagents, *Bacillus subtilis* was found more effective than *Pseudomonas fluorescens* with 79.2 and 62.5 per cent growth inhibition over control. Among the ten varieties tested against *Fusarium oxysporum* f.sp. *lycopersici* in greenhouse, Bhagyashree and Dhanashree were found moderately resistant to wilt of tomato having 25.00 and 30.00 per cent disease incidence followed by RII-T-2, M-1-3, M-2-2, 8-1-5, NBC, 6-1, M-1-2 and RII-T1 with 55, 60, 60, 70, 70, 75, 80 and 85 per cent disease incidence, respectively.

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