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Usefulness of Trichoderma and Pseudomonas against Rhizoctonia solani and Fusarium oxysporum infecting

tomato

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Abstract

The general inadequacy of chemical fungicides to tackle Rhizoctonia solani and Fusarium oxysporum diseases in tomato has led to the search for biocontrol solutions to these maladies. Twenty-six local isolates of Trichoderma spp. and 56 isolates of fluorescent pseudomonads from Kerala were evaluated for their antagonistic activity against R. solani and F. oxysporum under in vitro conditions. Different isolates showed varying degrees of antagonism. The two most antagonistic isolates against R. solani were T. pseudokoningii TR17 and T. harzianum TR20. Likewise, T. viride TR19 and TR22 formed the most effective isolates against F. oxysporum. Production of volatile and non-volatile antibiotic compounds varied among these isolates. Of the fluorescent pseudomonads, Pseudomonas fluorescens isolates P28 and P51 showed the greatest inhibition against R. solani whereas against F. oxysporum, P20 and P28 were most effective. Isolates obtained from the phylloplane were generally unsuccessful. Inhibitory property of the antagonistic bacteria was also media-dependent. Many of the pseudomonads, which inhibited the pathogens on KMB agar, failed to retard the pathogen's growth on the PDA medium. The bacterial and fungal antagonists were also not mutually antagonistic as their co-inoculation hardly inhibited each other.

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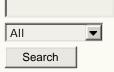
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