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Management of collar rot of *Capsicum annuum* caused by *Sclerotium rolfsii* through *Trichoderma harzianum*

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Saprophytic microorganisms are common inhabitants of plant surfaces. By various mechanisms, they may alter the growth of pathogens and reduce the diseases they cause. Growing awareness of the environmental damage caused by the use of chemical substances for plant disease control in agriculture has raised the need to study biological alternatives. Biological control involves harnessing disease suppressive microorganisms to improve plant health. *Sclerotium rolfsii* Sacc. is a widespread phytopathogenic fungus affecting a large number of crop plants leading a considerable crop loss. It causes collar and root rot on *Capsicum annuum* and one of the important soil-borne pathogens in Sri

Lanka. An isolate of *Trichoderma harzianum* was selected on the basis of antagonism showed against *S. rolfsii* in dual Petri plate assay. In the Petri plate assay, *T. harzianum* inhibits the growth of *S. rolfsii* showing a clear inhibition zone between two fungi and sclerotia formation did not take place compared to the control plates. Moreover, *T. harzianum* coiled around the *S. rolfsii* and disintegration of the pathogen's hyphae was observed indicating strong antagonism activity of the biocontrol agent. The isolate reduced disease incidence significantly when delivered as soil amendment at the rate of 10^6 conidia/ g soil but not used as seed dressing in the pot trials. Combined application significantly enhanced the plant protection compared to the single application. The results implicated the importance of mode of application of the biocontrol agent and the effectiveness of *T. harzianum* in controlling *S. rolfsii* on *C. annuum*.

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