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**RESEARCH ARTICLE**

# Efficacy of *Pseudomonas fluorescens* and *Trichoderma viride* based bioformulation for management of bacterial wilt disease of ginger

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## SUMMARY

An experiment was conducted to evaluate the efficacy of a consortia formulation of *Pseudomonas fluorescens* and *Trichoderma harzianum* for management of bacterial wilt disease of ginger in Assam. Inhibitory effect of the biocontrol agents was evaluated *in vitro* following dual culture assay method for their efficacy against *Ralstonia solanacearum*, the ginger wilt pathogen. Quantitative assay of population dynamics of the two antagonists, mass cultured in organic substrates *viz.*, vermicompost (VC) and mustard oil cake (MOC) revealed that the antagonists maintained a high population count up to 120 days of storage at room temperature. *Pseudomonas fluorescens* recorded highest average population (45.47 x $10^7$cfu/g) when mass cultured in the mixture of VC and MOC, while *T. harzianum* recorded maximum average population (34.14 x $10^7$cfu/g) when mass cultured in MOC. Bioformulations were further evaluated for their efficacy in ginger wilt management under field condition. Efficacy of one fungicide (Copper oxychloride) and an antibiotic (Streptocycline) was also tested for comparison. Lowest disease incidence (15.63%) was recorded in the treatment of seed treatment (ST) and soil application (SA) of *P. fluorescens* and *T. harzianum* consortia mass cultured in the mixture of VC and MOC. It was followed by ST and SA of *T. harzianum* mass cultured in MOC (21.88%), which was statistically *at par* with the application of copper oxychloride (26.25%).

**Key Words :** Antagonists, Bacterial wilt, Biological management, Ginger, Substrates

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