

EFFICACY OF *TRICHODERMA VIRIDE* TO INDUCE DISEASE RESISTANCE AND ANTIOXIDANT RESPONSES IN LEGUME *VIGNA MUNGO* INFESTED BY *FUSARIUM OXYSPORUM* AND *ALTERNARIA ALTERNATA*

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ABSTRACT

This study was designed to evaluate the potential of *Trichoderma viride* spore suspension as biocontrol agent against *Fusarium oxysporum* and *Alternaria alternata* in legume, black gram (*Vigna mungo*) under greenhouse conditions. Seeds and seven days old plants of black gram were artificially infested with *F. oxysporum* and *A. alternata*. Concurrently, they were treated with *Trichoderma viride* spores. It was observed that the seed germination (%), growth (shoot and root), vigour index and disease resistance in plant samples treated with *Trichoderma* increased than in controls. Experiments were also conducted to understand the role of *T. viride* in inducing the antioxidant system of black gram plants so as to create systemic resistance against *F. oxysporum* and *A. alternata*. Lipid peroxidation levels were found to be decreased in *Trichoderma* treated samples. Our findings concluded that triggering of antioxidant systems played an important role in mitigating pathogen-induced oxidative stress during systemic resistance by *T. viride* in black gram. This study holds important inferences for developing effective strategies in promoting *Trichoderma spp.* based biocontrol agents in mitigating the fungal infections in legume plants.

KEYWORDS: *Trichoderma viride*, *Vigna mungo*, *Fusarium oxysporum*, *Alternaria alternata*, Biocontrol, Antioxidant enzymes, Lipid peroxidation