

# Differential Ability of Trichoderma Species in Imparting Biotic Stress Tolerance in *Cicer Arientum*

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**Abstract:** The world had undergone green revolution to boost the production of food grains in order to feed the exponentially swelling population laying the foundation for the perpetual deposition of toxic residues. Use of alternate sources of fertilizers and pesticides i.e. biocontrol agents (BCAs) can prove as a silver lining for restoring the ecological balance. The affectivity of *Trichoderma* as biocontrol agent is well established. Mechanisms behind the fungus' forte in obliterating the phytopathogens have been attributed to mycoparasitism, antibiotic secretion, competition for nutrients and elevating plants' immune resistance against pathogens. Many *Trichoderma* species have been exploited as BCA, main being *T. harzianum* apart from *T. viride*, *T. asperellum*, *T. virens* etc. However, meager studies have been carried out to access the mycotrophic ability of different *Trichoderma* species separately. A study was carried out to evaluate the mycoparasitic and growth promoting ability of different *Trichoderma* species including *T. harzianum*, *T. asperellum*, *T. longibrachiatum*, *T. koningiopsis* and *T. aureoviride* against *Sclerotium rolfsii* infection on chickpea through green house experiment, lignification pattern and recording the disease mortality in different treatments against control. Interestingly, apart from the conventionally proposed species of *Trichoderma* as BCA, i.e. *T. harzianum* and *T. asperellum*; *T. koningiopsis* and *T. longibrachiatum* showed excellent result with augmenting plant growth by 75% dry weight and increasing germination by 24%. Also, disease incidence was recorded to be reduced to about 45% as against pathogen control plants. Intense lignifications pattern was observed in transverse sections of stems of *T. koningiopsis* and *T. longibrachiatum* treated plants on challenge with *S. rolfsii*. Hence, it could be concluded that species other than *T. harzianum* could be promoted as BCA, aiding in commercialization of formulations based on indigenous species of *Trichoderma*, thereby opening new avenues for better eco friendly disease management strategies.