



## EVALUATION OF DIFFERENT SUBSTRATES FOR ECONOMICAL MASS MULTIPLICATION OF *TRICHODERMA*, A BIOCONTROL FUNGAL AGENT

AVIRAL ASAIYA<sup>1\*</sup>, DARSHAN K<sup>1</sup>, SHIFA KUMAR<sup>1</sup>, CHOKHELAL PRAJAPATI<sup>1</sup>,  
SONALI NIGAM<sup>2</sup> AND NITIN KULKARNI<sup>1</sup>

<sup>1</sup>Forest Protection Division, Tropical Forest Research Institute, Jabalpur (M.P.)

<sup>2</sup>Head, Department of Microbiology, St. Aloysious College, Jabalpur (M.P.)

\*Corresponding author email: aaviral143@gmail.com

**ABSTRACT:** Isolation of 32 fungal cultures was carried out from rhizospheric region of *Dalbergia sissoo* from different soil samples. The soil samples were collected from different sites of Seoni, Sagar and TFRI, Jabalpur. Out of 32 fungal culture isolates, 15 fungal isolates were identified as *Trichoderma* species. Among the fifteen *Trichoderma* isolates, *Trichoderma harzianum* was identified as fast-growing species based on their growth rate. The morphological and taxonomical characterization was also applied in order to differentiate the isolated *Trichoderma* species. Laboratory conditions were optimized for the growth of *T. harzianum* using cheaply and readily available agricultural waste for mass multiplication and low-cost development of these useful fungi. With the use of, vegetable waste, other organic waste material and assessment of their availability as substrates for mass multiplication *Trichoderma harzianum*, evaluated an effective and cheap production methodology that can be easily adopted.

**Keywords:** Fermentation, fungal agent, substrate, *Trichoderma*, waste

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### INTRODUCTION

*Trichoderma* species are filamentous fungi that multiply on various substrates such as soil, decayed wood, and it colonizes roots (Grondona *et al.*, 1997). Due to their diverse metabolic activity and very aggressive competitiveness, nature helps them to succeed in their habitats (Barari, 2016). considering morphological characteristics such as conidia, they form mainly compact pustules which are in green color shades, grey, or brown (Sriram and Savitha, 2015).

A genus of fungi belonging to the Hypocreaceae family has been named *Trichoderma*. It is found

everywhere, in the soil, rotting wood, plants and oceans. The majority of these species are opportunist, avirulent and symbiotic. Against certain pathogenic fungi of cruciferous plants, they may be useful biocontrol agents according to Harman *et al.*, (2004). For example, *T. asperellum* (T-34) and *T. harzianum* (SQR-T307) are found to be effective bio-control agents against *F. oxysporum* (Corrales *et al.*, 2010; Yang *et al.*, 2011). The occurrence of tomato wilt is reduced by the presence of isolated *T. asperellum*, according to Cotxarrera *et al.* (2002). *T. gamsii* 6085 is often used in a competitive test against *F. subtilis* and *F. graminearum*, a rice field pathogen which implies