

**LIQUID FORMULATION AND SPORE VIABILITY OF AN ANTAGONISTIC FUNGUS  
*Trichoderma viride*, IN FRUIT PULP OF *Tamarindus indica***

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**ABSTRACT**

*Trichoderma* species are promising antagonistic fungus against soil-borne plant pathogens and more prevalent among other bio-control agents. It has great perspective to be mass-produced by using cost effective locally available substrates in Sri Lanka. Therefore, present investigation was carried out to initiate the cost effective liquid medium by using, *Tamarindus indica* deseeded fruit pulp for *T. viride*. Preliminary evaluation for conidial production was done with 10 g of pulp for 100 mL of distilled water. Then concentrations (2, 4, 6, 8, 10 g and 20, 40, 60, 80, 100 g of pulp/100 mL of distilled water) of the medium was standardized and effective range was chosen. For that selected effective range, conidial production was evaluated and viability of conidia produced on selected concentration ranges of the medium was determined by taking colony forming units (CFU/ mL). Results revealed, preliminary conidial count of  $2.1 \times 10^8$  / mL was obtained at a Week After Inoculation (WAI). Conidial count from standardization was obtained as;  $15.7 \times 10^8$ ,  $12.5 \times 10^8$ ,  $7.4 \times 10^8$ ,  $5.7 \times 10^8$ ,  $5.5 \times 10^8$  conidia/mL respectively for 10, 8, 6, 4, 2 g/100 mL. Conidial count was recorded as  $19.5 \times 10^8$ ,  $15.6 \times 10^8$ ,  $12.96 \times 10^8$ ,  $5.9 \times 10^8$ , respectively for 20, 40, 60, 80 and 100 g/100 mL of distilled water at 3 WAI. The selected effective concentration range of 5 to 25 g/100 mL of distilled water was significantly promoted the conidial production from  $10.1$  to  $31.8 \times 10^8$  /mL at 3 WAI. The productive range for mass multiplication of *T. viride* was 15 to 35g pulp/100mL of distilled water. The conidia was stabilized for 8 weeks in standardized tamarind pulp. This novel result would help the *Trichoderma* producing industries to economically feasible commercial production with the locally available natural ingredients. Further research has to be carried out to combine the tamarind pulp with other suitable ingredients to sustain the viability of the conidia in the commercial formulations for a longer period.

**Keywords:** Liquid medium, Mass production, *Tamarindus indica*, *Trichoderma viride*, Viability