

PRELIMINARY ASSESSMENT OF *Trichoderma virens* BASED RICE SEED CAPSULE ON SELECTED RICE GROWTH PARAMETERS

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Trichoderma virens is a bio-control agent used against phytopathogens and has a remarkable ability for plant growth promotion. Its efficacy can be affected due to several biotic and abiotic factors. Rice seed encapsulation with *T. virens* has been used to maximize the efficacy of its uses. This research was conducted to assess the efficacy of rice seed capsules prepared by in cooperating locally-isolated *T. virens* under *in-vitro* and *in-vivo* conditions. Rice seed capsule was prepared by incorporating the spore quantity of *T. virens* (2.5×10^6 spores mL⁻¹) and two rice seeds of Bg 380. Plant growth parameters and spore multiplication were reported throughout the experimental period by using pot trial and artificial field trial. Data analysis was done by using repeated mixed effect model in SAS studio. According to the pot trial there was a significant effect of *T. virens* encapsulation method in increasing plant height, leaf number, and tiller number. The maximum plant height (37.34 cm $\pm$ 0.25) was reported in *T. virens* with full Department of agriculture fertilizer recommendation applied treatment and minimum (28.89 cm $\pm$ 0.17) was reported in control. There was a significant difference in *T. virens* treated plants and non-treated plants for growth parameters ($p < 0.05$) under artificial field conditions. Colony forming units were recorded and the results revealed the spores of *T. virens* were viable and multiplied throughout the experimental period in both pot trail and artificial field trial. *Trichoderma virens* encapsulation exhibited zero-disease incidence in both pot and artificial field trial condition. The result shows the efficacy of the *T. virens* encapsulation method in enhancing rice plant growth.

Keywords: Artificial field trial, Colony forming units, Plant growth, Pot trial