

**EFFECT OF TRICHODERMA APPLICATION ON SOIL BORN
PATHOGEN OF TUSAM (*Pinus merkusii* Jungh. et de Vriese) PLANTED
ON THREE DIFFERENT PARTICLE SIZES OF SAND MEDIUM**

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ABSTRACT

Water content of sowing medium in nursery is potential growth factor for seedlings, but in the other hand act as prerequisite factor for soil born pathogen attack. Level of water content in medium is mostly determined by its porosity and the size of particles is paramount determinant when the medium is made of sand. Adequate water content of medium also determinant determine the successful establishment and activity of biological control soil born pathogens. The experiment aimed to evaluate the effects of particle sizes of sand used for sowing medium on anthagonistic activity of *Trichoderma* against the causing *damping off* causal agent, *Fusarium*.

Result on in vitro dual culture experiment on potato dextrose agar (PDA) showed that *T. koningii* (T₁), *T. reesei* (T₁₃), and *T. harzianum* (T₂₇) actively inhibited *Fusarium* at 68,87%, 100% and 69,22% respectively compared to *Fusarium* growing alone on PDA. Used of coarse and medium particles of sand could decreased seedling mrtality due to *Fusarium* attack to 29,43% and 36,86% respectively from 50,45% mortality of seedling on fine particle size. High mortality of seedling invested by *Fusarium* on medium of variable particles sizes treated with *T. reesei* might due to failure of *Trichoderma* to initiate establishment. Lack of organic component in pure sand medium needs further study to convince as responsible factor for the failure of *Trichoderma* to established. No significant clue to conclude the possible effects of particle size of medium on seedling mortality. It was to note that particle size gave no rise to different water holding capacity of medium, the factor that determined the survival and activity of both pathogen and biological agent.

Key word : *Trichoderma* spp., *Fusarium* sp., medium particle size, inhibition percentage