

THE INHIBITION OF 3 ISOLATES *Trichoderma* spp. AGAINST *Rhizoctonia solani* Kuhn. ON PINE SEEDLING (*Pinus merkusii* Jungh. et de Vriese)

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ABSTRAC

Rhizoctonia solani is one of the pathogens attacking Pine seedlings, such as *damping-off* indicated by chlorotic lesions at base of longleaf pine and death of terminal bud in older seedlings. Pathogen ability to produce sclerotia make it survive under unfavourable conditions and more complicated to control. Fungicide control method on the disease was unsafe for the environment. Biological control use antagonistic microorganism has been developed as alternative method. Such as *Trichoderma* sp. that has been tested its antagonistic potential to against several soil-born pathogen. The aimed of experiment were to evaluate (1) the capacity of three isolates of *Trichoderma* spp. as biological agent against soil-born pathogen *R. solani* *in vitro*, (2) the capacity of three isolates of *Trichoderma* spp. as biological agent against soil-born pathogen *R. solani* *in vivo* and (3) microscopic antagonistic interaction between the isolates of *Trichoderma* spp. with *R. solani* *in vitro*.

The experiment use three isolates of *Trichoderma*: *T. koningii* (T₁), *T. reesei* (T₁₃). and *T. harzianum* (T₂₇). The objectives were achieved by several approaches, involving: (1) patogenicity test of *R. solani* on pine seedling, (2) antagonistic *in vitro* test of *Trichoderma* spp., (3) inhibitory growth *in vitro* test of fungicide and (4) efectiveness test of *Trichoderma* spp. *in vivo*.

The result of research showed that *R. solani* had pathogenicity of causing *damping-off*. The three isolates of *Trichoderma* tested had inhibitory capacity variations againts *R. solani*. *T. koningii* inhibited 24,86% of the total colony area of *R. solani*, whereas *T. reesei* and *T. harzianum* inhibited 88,37% and 69,57% of the same fungi respectively. The result also sowed that the mechanisme between *Trichoderma* spp. and *R. solani* pathogen were micoparacite and antibiosis. Fungicide can replaced with *Trichoderma* spp. to inhibit *R. solani* development. The result of *in vivo* test showed that the inhibition of *Trichoderma* spp. was congruent with *in vitro* test.

Key word: *Trichoderma* spp., *R. solani*, inhibitory.

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