

## THE EFFECTIVITIES OF *Trichoderma* spp. ON THREE SOIL-BORNE PATHOGENS AT SOME FORESTRY TREES SPECIES

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### ABSTRACT

Soil-borne pathogens are the mayor cause of damages at industrial forest plantations. *Rigidoporus microporus* and *Ganoderma* sp. was reported to attack some forestry trees species and causing significant damage. *Sclerotium rolfsii* was pathogen caused seedling root-rot. *Trichoderma* spp. has been tested their antagonistic potential against some forest tree root-rot diseases. This experiment aimed to compare the abilities of *Trichoderma* to control soil-borne pathogens with fungicides, to evaluate the effect of fungicides and differences nutritional status of medium on the activities of *Trichoderma*.

The experimental approaches were 1) antagonistic test of three *Trichoderma* isolates and activities tests of three fungicides against root pathogens, each with four level concentrations; 2) evaluation of the growth of the pathogen and *Trichoderma* spp. on three kinds of medium : potato dextrose agar (PDA), soil extract agar (SEA) and tap water agar (TWA); and 3) evaluation of the growth of *Trichoderma* spp. on media on which different concentration of fungicides had been added.

The results showed that three isolates of *Trichoderma* have comparable effectivities with fungicides in inhibition pathogens. *T. koningii* at the concentration of  $10^3$  spores/ml gave same inhibition effect on the growth of *R. microporus* to 0.2 ppm captafol; *T. reesei* at the concentration of  $10^4$  spores/ml gave same inhibition effect against *Ganoderma* sp. to 25 ppm benomyl; and *T. harzianum* at the concentration of  $10^5$  spores/ml had the same inhibition effect against *S. rolfsii* to captafol at the concentration of 20 ppm. The results also showed that fungicides could affect the activities of *Trichoderma* if both were applied together on the same medium. The antagonistic effectivities of *Trichoderma* spp. to pathogen fungi was influenced more by the level nutritional level of medium compared to fungicides. *T. harzianum* at the concentration of  $10^5$  spores/ml on PDA gave comparable effect to 20 ppm captafol on PDA, SEA and TWA.

**Key words** : *Trichoderma* spp., soil-borne pathogens, fungicide activity.

