

SUBSTITUTION OF BIOLOGICAL AND DECOMPOSITION AGENTS TO TRANSPLANTING MEDIUM FOR TEAK CUTTING TO CONTROL ABIOTIC DISEASE AND SOIL BORN PATHOGEN

ABSTRACT

Growth medium in nursery plays an important role in facilitating growth and development of seedling. Best medium have medium to coarse texture, neutral reaction, no nutrient deficiency and good cation exchange. capacity. Practically few sites has optimal edaphic attributes, and soil management practices are normally applied to ensure rapid growth and healthy seedling. The experiment aimed to evaluate the effect of medium amelioration through compost substitution and application of *Trichoderma* as biological agent to seedling growth enhancement and health.

Two kind of composts used for substitution each with dung manure and cane pulp as the basic materials and both were decomposed using fresh cow dung as the decomposer. *Trichoderma* was applied in pellet formulation developed by the Laboratory of Forest protection, Faculty of Forestry. All treatments were arranged in completely randomized block design with tree replicates.

Results showed significant increment on seedling growth due to compos substitution, indicated increased growth survival of seedlings on medium A₂, seedling height on medium K₂A₂, diameter on medium K₁A₂, root length on medium K₂A₂, shoot-root ratio on K₂A₂ at the percentages of 1.6%, 1.16%, 4.05%, 1,89%, and 2.24% respectively compared to the original medium K₁A₁. Addition of biological agent *Trichoderma reesei* on growth medium increased growth survival, height, soundness, root length and dry weight of seedlings by 6.68%, 10.27%, 4.51%, 20.04%, and 20.64% respectively, though no significant effect was noted on some abiotic symptom of seedling.

Key word: *Trichoderma reesei*, *Tectona grandis*, biological agent, Growth medium

