

**PENGARUH INOKULASI MIKORIZA VESIKULAR ARBUSKULAR  
TERHADAP PERTUMBUHAN SEMAI *Acacia crassicarpa* A. Cunn. ex  
Benth. DI PERSEMAIAN PT. MAYANGKARA TANAMAN INDUSTRI,  
KALIMANTAN BARAT**

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**INTISARI**

*Acacia crassicarpa* merupakan tanaman yang memiliki potensi sebagai bahan baku pulp dan kertas dan telah dikembangkan sebagai hutan tanaman industri salah satunya di PT. Mayangkara Tanaman Industri (PT. MTI). Permasalahan yang terjadi di PT. MTI yaitu, persentase jadi semai *A. crassicarpa* yang masih rendah (20%) dan kemampuan hidup semai di lapangan yang rendah. *A. crassicarpa* merupakan jenis yang dapat bersimbiosis dengan mikoriza, sehingga, dapat meningkatkan pertumbuhan semai *A. crassicarpa*. Sejauh ini, respon pemberian mikoriza pada *A. crassicarpa* di persemaian PT. MTI belum diketahui. Penelitian ini bertujuan untuk mengetahui pengaruh inokulasi mikoriza pada pertumbuhan semai *A. crassicarpa* serta persentase infeksi pada akar semai *A. crassicarpa* di persemaian.

Penelitian ini menggunakan metode eksperimental dengan desain Rancangan Acak Lengkap (RAL), terdiri dari satu faktor dengan tiga level dengan masing-masing 8 individu dengan 5 kali ulangan yaitu perlakuan inokulasi mikoriza 1; inokulasi mikoriza 2; dan tanpa inokulasi (kontrol). Parameter yang diamati meliputi persen hidup semai, tinggi (cm), diameter (mm) semai, pendugaan biomassa semai (g), berat bintil akar (g) serta infeksi mikoriza pada akar semai (%). Pengamatan dilakukan untuk pengukuran parameter persen hidup semai, tinggi, diameter. Pengukuran parameter semai dilakukan hingga semai berusia 8 minggu. Data dianalisis menggunakan uji statistik Anova *one way* yang dilanjut dengan uji lanjut Tukey.

Hasil pengamatan pada semai *A. crassicarpa* pada usia 8 minggu menunjukkan bahwa perlakuan mikoriza 1 dan mikoriza 2 meningkatkan persentase hidup semai ( $M1=92,5\% \pm 6,85$ ;  $M2=90\% \pm 22,36$ ) dengan berat bintil akar yang signifikan ( $M0 = 0,00075 \pm 0,0017$ ;  $M1 = 0,00105 \pm 0,0023$ ;  $M2=0,00158 \pm 0,0033$ ), meskipun pada parameter pertumbuhan tinggi dan diameter tidak berbeda secara signifikan namun, persen infeksi mikoriza pada perlakuan mikoriza 1 dan mikoriza 2 yang diinokulasi mikoriza memiliki tingkat infeksi yang lebih tinggi dibandingkan dengan perlakuan kontrol ( $32,33\% \pm 18,43$ ;  $36,67\% \pm 13,28$ ).

Kata Kunci: *Acacia crassicarpa*, Mikoriza vesikular arbuskular, Inokulasi, Infeksi akar, *Cocopeat*

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***THE EFFECT OF VESICULAR-ARBUSCULAR MYCORRHIZAL INOCULATION ON THE GROWTH OF *Acacia crassicarpa* A. Cunn. Ex Benth. SEEDLINGS IN PT. MAYANGKARA TANAMAN INDUSTRI NURSERY, WEST KALIMANTAN***

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**ABSTRACT**

*Acacia crassicarpa* is a plant that has potential as a raw material for pulp and paper and has been developed as an industrial plantation forests, one of which is at PT. Mayangkara Tanaman Industri. The problem occurred at PT. MTI were the low percentage of *A. crassicarpa* seedlings (20%) and low survival rate of seedlings in the field. *A. crassicarpa* is a seedling that can form a symbiosis with mycorrhizal, so it can be increased the growth of *A. crassicarpa* seedling. So far, the response of *A. crassicarpa* to mycorrhizal treatment in PT. MTIs nursery is unknown. This study aims to determine the effect of mycorrhizal inoculation on the growth of *A. crassicarpa* seedlings and the percentage of infection in the roots of *A. crassicarpa* seedlings in the nursery.

This research used an experimental method with a Completely Randomized Design (CRD) consisting of one factors with three levels with 8 individuals each with 5 replications, namely mycorrhizal inoculation treatment 1; mycorrhizal inoculation 2; and no inoculation (control). The parameters observed included the percentage of seedlings survival, height (cm), diameter (mm) of seedlings, estimated seedlings biomass (g), root nodule weight (g) and mycorrhizal infection in seedling roots (%). Observations were made to measure the parameters of the percentage of seedlings survival, height, diameter. Measurements of seedlings parameters were carried out until the seedlings were 8 weeks old. Data were analyzed using one-way ANOVA statistical test followed by Tukey's follow-up.

The results of observations on *A. crassicarpa* seedlings at the age of 8 weeks showed that mycorrhizal treatment 1 and mycorrhizal treatment 2 increased the percentage of seedlings survival ( $M1 = 92.5\% \pm 6,85$ ;  $M2 = 90\% \pm 22,36$ ) with significant root nodule ( $M0 = 0.00075 \pm 0,0017$ ;  $M1 = 0.00105 \pm 0,0023$ ;  $M2 = 0.00158 \pm 0,0033$ ), although the growth parameters of height and diameter were not significantly different, however, the percentage of mycorrhizal infection in mycorrhizal treatment 1 and mycorrhizal treatment 2 inoculated with mycorrhizal had higher infection rate compared to the control treatment ( $32.33\% \pm 18,43$ ;  $36,67\% \pm 13,28$ ).

Keywords: *Acacia crassicarpa*, Vesicular arbuscular mycorrhiza, Inoculation, Root infection, Cocopeat

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