

**OPTIMALISASI PERTUMBUHAN TANAMAN  
SENGON SOLOMON (*Falcataria falcata* (L)) MELALUI PEMUPUKAN  
NPK DAN KOMPOS PADA AREA REKLAMASI  
PT SUPRABARI MAPANINDO MINERAL  
KABUPATEN BARITO UTARA**

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**INTI SARI**

Kegiatan reklamasi merupakan upaya mengembalikan fungsi lahan yang telah terdegradasi. Salah satu tantangan utama reklamasi tambang adalah rendahnya kesuburan tanah baik secara fisik, kimia dan biologi. Penelitian ini bertujuan untuk menentukan kombinasi dosis pupuk NPK dan kompos yang optimal terhadap pertumbuhan tanaman Sengon Solomon (*Falcataria falcata* (L.)) di area reklamasi PT Suprabari Mapanindo Mineral, Kabupaten Barito Utara. Desain *Randomized Completely Block Design* (RCBD) digunakan dengan dua faktor perlakuan, yaitu dosis pupuk NPK (50 g, 100 g, 150 g) dan kompos (1 kg, 2 kg, 3 kg), serta satu kontrol. Penelitian dilaksanakan selama 12 minggu dengan pengamatan terhadap persen hidup tanaman, pertumbuhan tinggi dan diameter. Analisis statistik menggunakan ANOVA dilanjutkan dengan uji DMRT. Hasil menunjukkan Blok 2 mempengaruhi pertumbuhan tinggi dan diameter tanaman secara nyata dibanding yang lain. Pada kasus ini, semakin lereng lahan, semakin baik pertumbuhan tanaman akibat drainase yang lebih baik. Perlakuan NPK 150 g dan kompos 3 kg (N3D3) memberikan hasil terbaik terhadap peningkatan tinggi dan diameter tanaman secara signifikan, sedangkan persentase hidup tanaman tidak berbeda nyata antar perlakuan. Pemberian NPK menyediakan unsur hara makro yang cepat tersedia, sementara kompos memperbaiki sifat fisik, biologi, dan kimia tanah. Aspek efisiensi biaya menjadi pertimbangan dalam menentukan perlakuan. Penelitian ini merekomendasikan 2 perlakuan yang dapat dijadikan pertimbangan, dari aspek efisiensi biaya perlakuan NPK 100 g dan kompos 1 kg (N2D1) dengan pertumbuhan tanaman yang tetap tinggi dan tidak memakan biaya yang mahal, sedangkan dari aspek efektivitas pertumbuhan perlakuan NPK 150 g dan kompos 3 kg (N3D3) menunjukkan pertumbuhan yang sangat signifikan.

**Kata kunci :** Reklamasi, Sengon Solomon, NPK, Kompos, Pertumbuhan

**OPTIMIZATION OF PLANT GROWTH  
SOLOMON SENGON (*Falcataria falcata* (L)) THROUGH NPK AND  
COMPOS FERTILIZATION IN THE RECLAMATION AREA  
PT SUPRABARI MAPANINDO MINERAL  
NORTH BARITO DISTRICT**

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**ABSTRACT**

Reclamation activities are defined as the efforts to restore the function of degraded land. One of the primary challenges encountered in the process of mine reclamation pertains to the low fertility of the soil, which is characterised by its physical, chemical and biological properties. The objective of this study is to ascertain the most efficacious combination of NPK fertiliser and compost doses for the cultivation of Solomon Sengon (*Falcataria falcata* (L.)) plants in the reclamation area of PT Suprabari Mapanindo Mineral, Barito Utara Regency. A Randomized Completely Block Design (RCBD) was employed, incorporating two distinct treatment factors: The experiment involved the application of NPK fertiliser doses of 50 g, 100 g and 150 g, in addition to compost at quantities of 1 kg, 2 kg and 3 kg, respectively. A control treatment was also incorporated into the study. The study was conducted over a period of 12 weeks, during which observations were made on plant survival rate, height growth, and diameter. The statistical analysis employed in this study involved one-way analysis of variance (ANOVA) followed by the Duncan multiple range test (DMRT). The results indicated that Block 2 exerted a significant influence on plant height and diameter growth in comparison to the other blocks. In this particular instance, the presence of steeper slopes resulted in enhanced plant growth, attributable to the optimised drainage characteristics of the terrain. The combination of NPK 150 g and compost 3 kg (N3D3) exhibited optimal outcomes, manifesting as substantial increases in plant height and diameter. However, no statistically significant differences were observed in plant survival rates across the various treatments. The application of NPK provides rapidly available macronutrients, while compost improves soil physical, biological, and chemical properties. The cost-effectiveness of the treatment is a factor that is taken into consideration during the process of determining the most appropriate course of action. The study recommends two treatments for consideration: from a cost-efficiency perspective, the NPK 100 g and compost 1 kg (N2D1) treatment maintains high plant growth without incurring high costs; from a growth effectiveness perspective, the NPK 150 g and compost 3 kg (N3D3) treatment demonstrates highly significant growth.

**Keywords:** Reclamation, Solomon Sengon, NPK, Compost, Growth