

**TEKNIS OPTIMALISASI LAHAN REVEGETASI SOLIA HILL BLOK
SOROWAKO PT. VALE INDONESIA TBK. DENGAN PEMANFAATAN
APU-APU (*Pistia stratiotes L.*) dan ECENG GONDOK (*Eichhornia crassipes*)**

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INTISARI

Pemulihan lahan pasca tambang merupakan upaya krusial dalam mempertahankan kualitas lingkungan. Penelitian ini bertujuan untuk menganalisis karakteristik tanah dan kompos dari tanaman air sebagai alternatif media tanam pada program revegetasi di lahan PT. Vale Indonesia Tbk. yang didominasi tanah *oxisol* dengan kesuburan rendah. Studi ini juga mengevaluasi pengaruh media tanam terhadap pertumbuhan tanaman sengon butoh dan mengusulkan skema teknis optimalisasi lahan revegetasi. Penggunaan kompos dari tanaman air lokal sebagai alternatif media tanam diharapkan dapat memberikan solusi berkelanjutan untuk meningkatkan keberhasilan program revegetasi dan memulihkan fungsi ekologis lahan pasca tambang secara efektif dan efisien.

Metode *purposive sampling* digunakan untuk pengambilan sampel. Tanaman apu-apu (*Pistia stratiotes L.*) dan eceng gondok (*Eichhornia crassipes*) dikomposkan selama 30 hari. Analisis laboratorium dilakukan untuk mengetahui karakteristik kimia *topsoil* dan kompos. Percobaan penanaman menggunakan delapan perlakuan media tanam campuran dilakukan selama 30 hari dengan pengamatan pertumbuhan setiap 10 hari. Analisis korelasi *pearson* dan uji *one-way anova* digunakan untuk menganalisis data. Pengukuran parameter pertumbuhan meliputi tinggi dan diameter batang tanaman sengon butoh. Hasil analisis statistik digunakan untuk menentukan komposisi media tanam optimal dan mengevaluasi efektivitas kompos tanaman air dalam mendukung pertumbuhan tanaman revegetasi.

Hasil penelitian menunjukkan tanah lokasi memiliki kesuburan rendah dengan parameter C sangat rendah, P sedang, N, C/N, dan K rendah, serta pH sangat masam. Karakteristik kompos apu-apu dan eceng gondok sesuai dengan SNI 7763:2018. kompos apu-apu menunjukkan korelasi sedang terhadap penambahan diameter tanaman. Uji ANOVA dengan *post-hoc games-howell* mengindikasikan perbedaan signifikan antara perlakuan 7 dan 6 pada penambahan tinggi sengon butoh. Penelitian ini memberikan wawasan penting dalam pengembangan strategi revegetasi lahan pasca tambang menggunakan sumber daya lokal.

Kata Kunci : Revegetasi, *Pistia stratiotes L.*, *Eichhornia crassipes*, Media Tanam

**TECHNICAL OPTIMIZATION OF LAND REVEGETATION SOLIA HILL
BLOK SOROWAKO PT. VALE INDONESIA TBK. WITH THE USE OF APU-
APU (*Pistia stratiotes L.*) and Water Hyacinth (*Eichhornia crassipes*)**

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ABSTRACT

*Post-mining land restoration is a crucial effort in maintaining environmental quality. This study aims to analyze the characteristics of soil and compost from aquatic plants as alternative planting media in the revegetation program on PT. Vale Indonesia Tbk. land which is dominated by oxisol soil with low fertility. This study also evaluates the effect of planting media on the growth of *Enterobium ciclocarpum* and proposes a technical scheme for optimizing revegetation land. Using compost from local aquatic plants as an alternative planting media is expected to provide a sustainable solution to increase the success of the revegetation program and restore the ecological function of post-mining land effectively and efficiently.*

*The purposive sampling method was used for sampling. *Pistia stratiotes L.* and *Eichhornia crassipes* were composted for 30 days. Laboratory analysis was carried out to determine the chemical characteristics of topsoil and compost. Planting experiments using eight mixed planting media treatments were carried out for 30 days with growth observations every 10 days. Pearson correlation analysis and one-way anova tests were used to analyze the data. Measurement of growth parameters included the height and diameter of sengon butoh plant stems. The results of statistical analysis were used to determine the optimal planting media composition and evaluate the effectiveness of aquatic plant compost in supporting the growth of revegetation plants.*

*The results showed that the location's soil had low fertility with very low C parameters, medium P, low N, C/N, and K, and very acidic pH. The characteristics of *Pistia stratiotes L.* and *Eichhornia crassipes* composts are by SNI 7763:2018. *Pistia stratiotes L.* compost showed a moderate correlation with the increase in plant diameter. ANOVA test with post-hoc Games-Howell indicated a significant difference between treatments 7 and 6 in the rise in *Enterobium ciclocarpum* height. This study provides important insights into developing post-mining land revegetation strategies using local resources.*

*Keywords : Revegetation, *Pistia stratiotes L.*, *Eichhornia crassipes*, Planting Media*