

**PENGARUH POSISI BLOK PENANAMAN, JARAK TANAM, DAN  
PENGUNAAN BAMBU PELINDUNG TERHADAP PERTUMBUHAN  
AWAL *Rhizophora mucronata* Lamk.  
(Studi Kasus Restorasi Mangrove PT Freeport Indonesia di Provinsi  
Sumatera Utara)**

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**INTISARI**

Hutan mangrove di Indonesia mencakup 3,36 juta hektar atau 23% dari luas mangrove dunia, yang esensial bagi stabilitas lingkungan dan ekonomi pesisir. Penelitian ini bertujuan mengevaluasi pengaruh posisi blok penanaman, jarak tanam, penggunaan bambu pelindung, serta interaksi antara jarak tanam dan bambu pelindung terhadap keberhasilan penanaman *Rhizophora mucronata* Lamk. sebagai upaya restorasi ekosistem mangrove di Desa Bagan Percut, Kabupaten Deli Serdang, Sumatera Utara, yang pelaksanaan penanamannya menghadapi tantangan gelombang laut.

Penelitian eksperimental ini menggunakan metode *split plot*, dengan posisi blok penanaman sebagai *main plot* dan kombinasi jarak tanam (1x1 m, 2x2 m, 1x3 m) serta penggunaan bambu pelindung berupa bambu belah sebagai *sub plot*. Parameter yang diamati selama tiga bulan meliputi *survival rate*, penambahan tinggi, diameter, dan jumlah daun. Analisis data menggunakan pendekatan deskriptif kuantitatif. Hasil perhitungan disajikan dalam bentuk tabel dan grafik untuk memvisualisasikan pola, tren, dan sebaran data secara jelas.

Hasil penelitian menunjukkan bahwa penanaman di zona proksimal menghasilkan rendahnya *survival rate* dan pertumbuhan, mengindikasikan ketidaksesuaian lokasi dan perlunya perhatian pada pemilihan jenis. Pengaruh jarak tanam terhadap pertumbuhan tidak menunjukkan tren yang konsisten dalam tiga bulan pengamatan awal. Penggunaan bambu belah diduga berdampak negatif pada *survival rate* dan pertumbuhan *R. mucronata*, terutama di blok yang lebih dekat ke laut, karena memicu serangan teritip. Interaksi antara jarak tanam dan bambu pelindung menunjukkan hasil yang bervariasi dan tidak konsisten antar blok.

Kata Kunci: *Rhizophora mucronata*, Jarak tanam, Bambu pelindung, Restorasi mangrove, *Survival rate*.

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*EFFECT OF PLANTING BLOCK POSITION, SPACING, AND THE USE OF  
BAMBOO PROTECTORS ON THE EARLY GROWTH OF *Rhizophora mucronata*  
Lamk.*

*(Case Study of PT Freeport Indonesia's Mangrove Restoration in North Sumatra  
Province)*

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**ABSTRACT**

*Mangrove forests in Indonesia span 3.36 million hectares, accounting for 23% of the world's total mangrove area, and essential for environmental stability and coastal economies. This study aimed to evaluate the effect of planting block position, spacing, bamboo protectors, and the interaction between spacing and bamboo protectors on the success of *Rhizophora mucronata* Lamk. planting as part of mangrove ecosystem restoration in Bagan Percut Village, Deli Serdang Regency, North Sumatra, where planting implementation faced challenges from ocean waves.*

*This experimental research employed a split-plot method, with planting block position as the main plot and combinations of spacing (1x1 m, 2x2 m, 1x3 m) and the use of split bamboo protectors as subplots. Parameters observed over three months included survival rate, height, diameter, and number of leaves. Data analysis utilized a descriptive quantitative. Calculation results were presented in tables and graphs to clearly visualize data patterns, trends, and distribution.*

*The findings indicate that planting in the proximal zone resulted in low survival rates and growth, suggesting site unsuitability and the need for careful species selection. The effect of planting distance on growth did not show consistent trends during the initial three months of observation. The use of split bamboo protectors was suspected to negatively impact *R. mucronata*'s survival rate and growth, particularly in blocks closer to the sea, as it promoted barnacle infestation. The interaction between planting distance and bamboo protectors yielded varied and inconsistent results across blocks.*

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