

KEMAMPUAN MANGROVE DALAM MEREDAM ARUS GELOMBANG PASANG SURUT DAN MENGAKUMULASI SUBSTRAT LUMPUR DI DESA PASAR BANGGI, KABUPATEN REMBANG

INTISARI

Oleh: Faezal Prandeka

Penelitian ini bertujuan untuk mengetahui karakteristik habitat, pengurangan arus pada beberapa ketebalan mangrove dan lebar jalur hijau (LJH), laju sedimen transpor, serta pengaruh kerapatan perakaran mangrove terhadap pengurangan kecepatan arus, ketebalan lumpur, dan kelerengan pantai pada tahun tanam 1975, 1983 dan tahun tanam campuran di Desa Pasar Banggi. Sebagai kontrol data penelitian, dilakukan pengukuran pada lahan kosong. *Nested sampling* digunakan untuk mengukur karakteristik mangrove dengan total 40 PU. Ditribusi plot dengan menggunakan prosedur *systematic plot sampling*, dengan jarak antar PU 27 m (atas-bawah) dan jarak antar jalur 86 m (kiri-kanan). Metode langrangian digunakan untuk mengukur kecepatan arus. Sedimen transpor diukur menggunakan sedimen trap. Identifikasi pengaruh kerapatan perakaran mangrove terhadap pengurangan kecepatan arus gelombang pasang surut, ketebalan lumpur, dan kelerengan pantai digunakan analisis regresi sederhana. Sebelumnya dilakukan uji *anova* dan *Tukey HSD* untuk mengidentifikasi perbedaan yang signifikan pada nilai kerapatan perakaran dan ketiga faktor fisik di atas disetiap tahun tanam (1975, 1983 dan tahun tanam campuran). Hasil penelitian ini menunjukkan bahwa hanya mangrove dari periode tanam 1975 dan tanam campuran yang memiliki perbedaan karakteristik yang signifikan ($0,78 > 0,05$). Penurunan kecepatan arus gelombang pasang surut mengikuti peningkatan ketebalan dan lebar hutan mangrove. Sedimen transpor semakin berkurang dari zona depan ke zona belakang mangrove dengan tekstur sedimen didominasi oleh fraksi liat. Kerapatan perakaran berpengaruh signifikan terhadap peningkatan ketebalan lumpur ($R: 0,89, P: 0,00 < 0,05$) dan pengurangan kecepatan arus gelombang pasang surut ($R: 0,670, P: 0,006 < 0,05$).

Kata kunci: Kepadatan akar, kecepatan aliran, tebal lumpur, dan kemiringan pantai

**THE ABILITY OF THE MANGROVES IN REDUCING TIDAL WAVE
AND ACCUMULATE MUD SUBSTRATE IN PASAR BANGGI VILLAGE,
REMBANG CITY**

ABSTRACT

By: Faezal Prandeka

This research was aimed describe; the characteristics of the habitat, to measure current speed reductions of tidal sea wave several thicknesses of mangrove and mangrove green belt, to measure sediment transport, the indentify several the influence of mangrove root density on flow speed reduction, mud thickness, beach slopein (1975, 1983 and in the mixed year planting) in Pasar Banggi Village, we used bare land as the control. Nested sampling was employed to identify the mangrove characteristic, totally 40 plots have been estabilisted in the research location. The plot distributed by following systematic plot sampling procedure, with the distance between plots is 27 m (up-down) and 86 m (right-left). Lagrangian method was employed to measure the current speed. While sedimen trap method was employed to measure the sediment transport. To identify the effect of root densities on current speed reduction, mud thickness development and beach slopes simple regression analysis was performed Anova and Tukey HSD were employed. To identify wheter there were significant differences on root density, current speed reduction, mud development and beach slope in the different planting periods (1975, 1983 and mixed planting).The result showed that only mangroves from 1975 planting periods and mixed planting that have significant difference characteristics ($0,78 > 0,05$). Current speed was declined following the increase of thickness and width. The sediment transport has declimed respectively from front to back of mangrove zonation and the texture dominated by clay fraction. The root density of mangrove has significant effect on mud thickness development ($R: 0,89, P: 0,00 < 0,05$) and current's speed reduction ($R: 0,670, P : 0,006 < 0,05$).

Keyword: Root density, flow speed, mud thickness, and beach slope