

INVENTORE BIOMASSA DAN KARBON JENIS *Rhizophora apiculata* DI HUTAN MANGROVE

(Kasus di Desa Pasar Banggi, Kabupaten Rembang, Jawa Tengah)

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INTISARI

Hutan memiliki fungsi penting dalam siklus karbon global. Hutan mampu menjadi sumber dan rosot gas CO₂. Salah satu jenis hutan Indonesia yang berpotensi sebagai rosot gas CO₂ adalah hutan mangrove. Penelitian ini bertujuan mengetahui kandungan biomassa dan karbon salah satu jenis dominan penyusun hutan mangrove yang memiliki nilai kalor yang tinggi yaitu jenis *Rhizophora apiculata*

Penelitian ini dilakukan pada kawasan rehabilitasi hutan mangrove di Desa Pasar Banggi Kabupaten Rembang, Jawa Tengah. Metode penelitian terdiri dari 3 tahap yaitu: penyusunan persamaan allometrik dan perhitungan kandungan biomassa dan karbon, estimasi kandungan biomassa dan karbon. Analisis kandungan karbon pada penelitian ini menggunakan dua metode yaitu metode *walkley & black* dan karbonasi.

Dari hasil analisis 10 Pohon sampel yang ditebang diperoleh persamaan allometrik sebagai berikut : Persamaan allometrik karbon total *above ground* dengan metode *walkley & black* ($C_{\text{total}} = 0,090 (D)^{2,587}$, $R^2:0.88$), sedangkan dengan metode karbonasi ($C_{\text{total}} = 0,064 (D)^{2,58}$, $R^2:0.88$). Berdasarkan persamaan allometrik tersebut dapat diketahui potensi karbon total per hektar dengan metode Walkley & Black sebesar 107,82 ton/ha, sedangkan potensi karbon total per hektar dengan metode karbonasi sebesar 77,08 ton/ha. Dari hasil analisis kandungan karbon juga dapat diketahui rata-rata kandungan karbon dalam biomassa dengan metode *walkley & Black* sebesar 63.5%, sedangkan dengan menggunakan metode karbonasi sebesar 44.01%.

Kata kunci: biomassa, karbon, *walkley & black*, karbonasi, *Rhizophora apiculata*, allometrik, inventore

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INVENTORY OF BIOMASS AND CARBON IN *Rhizophora apiculata* IN MANGROVE FOREST

(Case Study in Pasar Banggi Village, Rembang Regency, Central Java)

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ABSTRACT

Forests have an important role in the global carbon cycle. Forests are a source of CO₂ gas. One of the types of forests in Indonesia which has CO₂ potential is the mangrove forest. This research aimed to observe and ascertain the biomass and carbon contents of one of the dominant species that makes up mangrove forests and has a high caloric value, this being *Rhizophora apiculata*.

This research was carried out in a mangrove rehabilitation area in Pasar Banggi Village, Rembang Regency, Central Java. There were three methods used in this research: the making of an allometric formula and the calculating of biomass and carbon contents, estimation of biomass and carbon contents. The analysis method used to analyze carbon contents was the walkley and black method and carbonation.

The results show that from 10 tree sample which were cut down, the following allometric formula was attained: allometric carbon formula for total above ground carbon using the walkley and black method ($C_{total}=0,090 (D)^{2.587}$, $R^2:0.88$). On the other hand the formula attained from the carbonation ($C_{total}=0,064(D)^{2.58}$, $R^2:0.88$). According to the allometric formula the total potential carbon per hectare using the Walkey & Balck method was 107.82 ton/ha. On the other hand, the potential carbon per hectare using the carbonation method was 77.08 ton/ha. The results of the carbon contents analysis show that the average carbon content in biomass using the Walkley & Black method was 63.5%. on the other hand, using the carbonation method the average carbon content was 44.01%.

Key words: biomass, carbon, walkley & Balck, carbonation, *Rhizophora apiculata*, allometric, inventory

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