

INVENTORE BIOMASSA DAN KARBON JENIS *Rhizophora mucronata*

DI HUTAN MANGROVE

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

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INTISARI

Hutan memiliki peranan yang penting dalam penyerapan dan penyimpanan gas CO₂ dari atmosfer. Untuk mengetahui besarnya kemampuan hutan dalam penyimpanan dan penyerapan gas CO₂ perlu dilakukan pengukuran kandungan biomassa dan karbon pada berbagai jenis vegetasi penyusun hutan, salah satunya yaitu *Rhizophora mucronata*. Kemampuan hutan mangrove jenis *Rhizophora mucronata* dalam menyimpan karbon belum dikuantifikasikan, oleh sebab itu perlu dilakukan penelitian untuk mengetahui kemampuan organ pohon *Rhizophora mucronata* dalam menyimpan karbon.

Pengukuran kandungan biomassa dan karbon organ pohon *Rhizophora mucronata* dilakukan di kawasan rehabilitasi hutan mangrove jenis *Rhizophora mucronata* di Desa Pasar Banggi Kabupaten Rembang, Jawa Tengah. Hutan mangrove ini ditanam pada tahun 1988 dan memiliki luas total 2,8 Ha. Metode penelitian terdiri dari 3 tahap yaitu : penghitungan kandungan biomassa dan karbon tiap organ pohon, penyusunan persamaan allometrik, dan estimasi kandungan biomassa dan karbon di kawasan rehabilitasi hutan mangrove.

Dari hasil analisis diperoleh hubungan antara diameter dengan kandungan karbon tiap organ dalam persamaan allometrik sebagai berikut :

C batang = 3,914(D)-19,70. C cabang = 0,049(D)^{1,726}. C daun = 0,015(D)^{1,977}.

C akar atas = 0,775(D) - 2,268. C total = 5,462(D) - 25,18. Persamaan-persamaan tersebut selanjutnya digunakan untuk menaksir potensi kandungan karbon. Dari hasil penelitian diperoleh kandungan karbon rata-rata per hektar pada organ batang 107,554 ton/ha, cabang 14,997 ton/ha, daun 8,219 ton/ha, dan akar atas 31,059 ton/ha. Sehingga kandungan karbon total organ pohon *Rhizophora mucronata* sebesar 163,316 ton/ha. Sehubungan hutan mangrove yang dianalisis ini berusia 22 tahun, maka kandungan karbon total organ pohon *Rhizophora mucronata* per tahun dapat diperkirakan sebesar 7,423 ton/ha/tahun.

Kata Kunci : biomassa, karbon, *Rhizophora mucronata*, allometrik, inventore

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**INVENTORE OF BIOMASS AND CARBON *Rhizophora mucronata*
IN MANGROVE FOREST**
(Case in Pasar Banggi Village, Rembang Regency, Central Java)

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ABSTRACT

Forests have an important role in the absorption and storage of CO² from the atmosphere. To determine the amount of storage and the ability of forests to CO² absorption should be measured biomass and carbon content of various types of vegetation making up the forest, one of which is *Rhizophora mucronata*. The ability of mangrove *Rhizophora mucronata* in storing carbon has not been quantified, therefore necessary to investigate the ability of organ *Rhizophora mucronata* trees in storing carbon.

Measurement of biomass and carbon content of tree *Rhizophora mucronata* organs performed in the area of mangrove forest rehabilitation *Rhizophora mucronata* in the Village PasarBanggi Rembang, Central Java. This mangrove forest planted in 1988 and has a total area of 2.8 ha. The research method consists of 3 stages: the calculation of biomass and carbon content of each organ of the tree, the preparation allometrik equation, and estimates of biomass and carbon content in the area of mangrove forest rehabilitation.

From the results obtained by analyzing the relationship between the diameter of the carbon content of each organ in allometrik equation as follows: $C \text{ bar} = 3.914 (D) - 19.70$. $C \text{ branch} = 0.049 (D)^{1.726}$. $C \text{ leaf} = 0.015 (D)^{1.977}$. $C \text{ root of} = 0.775 (D) - 2.268$. $C \text{ total} = 5.462 (D) - 25.18$. The equations are then used to estimate the potential carbon content. The result showed an average carbon content per hectare in stem organs 107.554 tons / ha, branch of 14.997 tons / ha, leaf 8.219 tons / ha, and roots of 31.059 tons / ha. So the total carbon content of tree *Rhizophora mucronata* organ of 163.316 tons / ha. In relation to the mangrove forest was analyzed 22 years of age, then the total carbon content of organs of *Rhizophora mucronata* trees per year can be estimated at 7.423 tons / ha / year.

Keywords : biomass, carbon, *Rhizophora mucronata* organs, allometric, inventore

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