

## **INVENTORE BIOMASSA DAN KARBON JENIS SENGON DAN TUMBUHAN BAWAH DI HUTAN RAKYAT DESA BATEH, KABUPATEN MAGELANG**

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### **INTISARI**

Salah satu isu global tentang lingkungan saat ini adalah pemanasan global yang disebabkan oleh meningkatnya konsentrasi gas rumah kaca. Hutan rakyat merupakan salah satu hutan yang dianggap efektif untuk mengatasi masalah tersebut karena penyusun hutan rakyat tidak hanya tanaman berkayu tetapi juga tumbuhan bawah. Tanaman-tanaman tersebut dapat menjadi agen dalam mengurangi konsentrasi CO<sub>2</sub> di atmosfer melalui proses fotosintesis. Penelitian ini bertujuan untuk 1) mengetahui biomassa dan simpanan karbon tegakan sengon bagian atas tanah dan tumbuhan bawah, 2) mengetahui kontribusi biomassa tumbuhan bawah terhadap simpanan *above ground biomass*, dan 3) mengetahui kelimpahan jenis tumbuhan bawah berdasarkan berat keringnya.

Penelitian ini dilakukan di Hutan Rakyat Desa Bateh, Kabupaten Magelang dan di laboratorium. Metode yang digunakan dalam pengambilan data diameter batang (*dbh*) adalah inventarisasi tegakan sengon dengan intensitas sampling 100% pada 30 lahan responden. Metode pengambilan sampel tumbuhan adalah *destruktif sampling* menggunakan kuadran alumunium ukuran 0,5x0,5 m. Tumbuhan bawah yang terdapat pada kuadran diambil dari bagian daun hingga akar dan dipotong pada leher akar untuk dioven selama 48 jam pada suhu 80°C. Penaksiran biomassa tegakan menggunakan persamaan allometrik dan tumbuhan bawah menggunakan total berat kering. Kelimpahan jenis ditaksir dengan menggunakan indeks nilai penting (INP) berdasarkan berat kering.

Hasil dari penelitian ini menunjukkan bahwa 1) Biomassa tegakan sengon bagian atas tanah sebesar 11,03 ton/ha dan kandungan karbon tersimpan sebesar 5,52 ton/ha sedangkan biomassa total tumbuhan bawah sebesar 2,91 ton/ha dan kandungan karbon tersimpan tumbuhan bawah sebesar 1,16 ton/ha. 2) Tumbuhan bawah mempunyai kontribusi terhadap total *above ground biomass* sebesar 21% dan terhadap simpanan karbon sebesar 17%. 3) Dalam penelitian ini, ditemukan 19 jenis tumbuhan bawah dimana jenis *Pennisetum purpureum* merupakan jenis dominan, mudah ditemukan, dan mempunyai peranan paling besar sebagai tumbuhan bawah penyusun ekosistem hutan rakyat di Desa Bateh, Kabupaten Magelang.

Kata kunci : hutan rakyat, kandungan karbon, sengon, tumbuhan bawah

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## BIOMASS AND CARBON INVENTORY OF SENGON AND UNDERSTOREY IN THE COMMUNITY FOREST OF BATEH VILLAGE, MAGELANG DISTRICT

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### ABSTRACT

One of the global issue about environment is global warming that is caused increasing the green house gases concentrations. Community forest is one of forest that effective to solve this problem because its component are tree and understorey. That plantation could be as agent for decreasing the CO<sub>2</sub> concentrations in the atmosphere by photosynthesis process. This research aimed 1) to know the biomass and carbon of *Paraserianthes falcataria* on part of above ground and understorey, 2) to know contribution of understorey biomass to above ground biomass, and 3) to know abundance of understorey species based on dry weight.

This research was conducted in the Community Forest in Bateh Village, Magelang District and in the laboratory. The Method that was conducted to take the stem diameter (dbh) was inventore of *P. falcataria* with sampling intensity 100% on 30 private landowners. To take the sample of understorey was conducted with destructive sampling method that used aluminum quadrant 0.5x0.5 m. The understorey which in that quadrant was taken from part of leaf until root and was cut on the root neck then was dried for 48 hours at 80 °C. Estimation of stand biomass was used allometric equations and for understorey was used total dry weight. The species abundance was estimated with importance value index (INP) based on dry weight.

The result of this research showed that 1) The biomass of *P. falcataria* on part of above ground was 11.03 ton/ha and carbon content was 5.52 ton/ha while total biomass of understorey was 2.91 ton/ha and carbon content of understorey was 1.16 ton/ha. 2) Contribution of understorey to total biomass above ground was 21% and to carbon content was 17%. 3) in this research, was found 19 species of understorey which *Pennisetum purpureum* was the dominant species, easy to find, and have biggest role as species of understorey on component of community forest ecosystem in Bateh Village, Magelang District.

Keywords : community forest, carbon, *Paraserianthes falcataria*, understorey

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