

**SIMPANAN BIOMASSA, KARBON DAN PEMANFAATAN  
BAMBU PETUNG (*Dendrocalamus asper*)  
DI PT. BAMBU NUSA VERDE  
SLEMAN, YOGYAKARTA**  
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**INTISARI**

Hutan mempunyai beragam manfaat, termasuk sebagai penyimpan karbon. Salah satu jenis penyusun hutan adalah bambu petung (*Dendrocalamus asper*) yang dikembangkan oleh PT. Bambu Nusa Verde (BNV). Jenis bambu petung di PT. BNV dikembangkan melalui kultur jaringan. Namun penelitian mengenai bambu melalui perkembangbiakan kultur jaringan belum banyak dilakukan. Oleh sebab itu, diperlukan penelitian lebih lanjut terkait kemampuan bambu petung dalam menyerap karbon. Dengan demikian, penelitian ini bertujuan untuk mengestimasi potensi simpanan biomassa, simpanan karbon, dan serapan CO<sub>2</sub> serta pemanfaatan dari bambu petung di PT. BNV.

Penelitian ini dilakukan pendugaan potensi simpanan biomassa di atas permukaan tanah dan di bawah permukaan tanah melalui sampling destruktif. Metode ini dilakukan dengan pembuatan model allometrik yang dipilih berdasarkan hasil evaluasi kecocokan dan kualitas model, validasi model serta uji asumsi klasik. Selain itu, untuk mengetahui pemanfaatan bambu petung dilakukan melalui teknik wawancara semi terstruktur.

Berdasarkan analisis data yang telah dilakukan, model allometrik pendugaan potensi simpanan biomassa terpilih mempunyai persamaan  $\hat{y} = 0,021 \times DBH^{3,08}$ . Dengan menggunakan persamaan allometrik tersebut diperoleh potensi simpanan biomassa sebesar 437,54 ton/ha, potensi simpanan karbon sebesar 163,31 ton/ha, dan potensi serapan CO<sub>2</sub> sebesar 599,37 ton/ha. Selain manfaat sebagai penyimpan karbon, bambu petung PT. BNV mempunyai nilai manfaat ekonomi berupa pulp dan kertas, biomassa, konstruksi bangunan, dan penutup lantai. Adapun nilai manfaat secara ekologi berupa sabuk hijau, perkebunan bambu, ekoeduwisata bambu, rehabilitasi lahan kritis, dan peredam suara.

*Kata kunci: dendrocalamus asper, kultur jaringan, model allometrik, atas dan bawah permukaan, serapan CO<sub>2</sub>, pemanfaatan*

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**BIOMASS STOCK, CARBON AND UTILIZATION OF  
PETUNG BAMBOO (*Dendrocalamus asper*)  
AT PT. BAMBU NUSA VERDE  
SLEMAN, YOGYAKARTA**  
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**ABSTRACT**

Forests have various benefits, including as carbon storage. One type of forest constituent is petung bamboo (*Dendrocalamus asper*), which was developed by PT. Bambu Nusa Verde (BNV). Petung bamboo species at PT. BNV are bred through tissue culture. However, there has not been much research on bamboo through tissue culture breeding. Therefore, further research is needed regarding the ability of petung bamboo to absorb carbon. For this reason, this research aims to estimate the potential biomass storage, carbon storage, and CO<sub>2</sub> sequestration and utilization of petung bamboo at PT. BNV.

In this study, the aboveground and belowground biomass storage potential was estimated through destructive sampling. This method is carried out by building an allometric model that is selected based on the results of the evaluation of model fit and quality, model validation, and classical assumption tests. In addition, to find out the utilization of petung bamboo, semi-structured interviews were conducted.

Based on the data analysis conducted, the allometric model for estimating the potential biomass storage selected has the equation  $\hat{y} = 0,021 \times DBH^{3,08}$ . By using the allometric equation, the biomass storage potential of 437.54 tons/ha, carbon storage potential of 163.31 tons/ha, and CO<sub>2</sub> sequestration potential of 599.37 tons/ha were obtained. In addition to its carbon storage benefits, PT. BNV's petung bamboo has economic benefits in the form of pulp and paper, biomass, building construction, and floor coverings. The ecological benefits include green belts, bamboo plantations, bamboo eco-tourism, critical land rehabilitation, and soundproofing.

**Keywords:** *dendrocalamus asper*, *tissue culture*, *allometric model*, *above and below ground*, *CO<sub>2</sub> sequestered*, *utilization*

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