

DIMENSI SERAT DAN PROPORSI SEL KAYU SAEH (*BROUSSONETTIA PYPYRIFERA* L. VENT) PADA ARAH RADIAL DAN AKSIAL YANG TUMBUH DI WONOGIRI

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INTISARI

Broussonettia papyrifera dikenal dengan nama kayu saeh merupakan salah jenis tanaman yang tumbuh di Indonesia. Di Wonogiri tepatnya di Pracimantoro, tanaman ini dimanfaatkan oleh masyarakat bagian kulit kayunya sedangkan bagian batang kayu masih minim pemanfaatannya. Minimnya pemanfaatan disebabkan kurang pengetahuan mengenai anatomi kayu tersebut seperti dimensi kayu dan proporsi kayu. Penelitian ini bertujuan untuk mengetahui dimensi serat dan proporsi sel kayu saeh pada arah aksial, radial, dan interaksi antara aksial – radial kayu saeh guna dapat menentukan proses pengolahan dan peruntukan kayu yang tepat.

Ciri mikroskopis kayu saeh diamati mengacu pada standar IAWA Committee (1989). Sampel proporsi sel kayu berupa sampel irisan pada bidang transversal dan radial yang diperoleh dengan mengiris sampel blok kayu menggunakan mikrotom geser; dan sampel maserasi menggunakan metode franklin. Variasi proporsi dan dimensi sel kemudian dianalisis menggunakan uji analisis HSD.

Hasil penelitian menunjukkan kayu saeh memiliki rerata hasil pengukuran dimensi sel panjang serat $969,89 \pm 222,75 \mu\text{m}$, diameter serat $22,50 \pm 6 \mu\text{m}$, diameter lumen serat $17,35 \pm 5 \mu\text{m}$, tebal dinding serat $2,58 \pm 1,02 \mu\text{m}$, frekuensi pembuluh $10,99 \text{ n/mm}^2$, frekuensi jari-jari $8,39 \text{ n/mm}^2$. Hasil pengukuran proporsi sel menunjukkan rerata proporsi serat 70,48%, proporsi parenkim 9,14 %. Faktor arah aksial memberikan pengaruh terhadap panjang serat, diameter serat, lumen serat, tebal dinding serat. Faktor arah radial memberikan pengaruh terhadap panjang serat, diameter serat, diameter lumen, tebal dinding serat dan frekuensi jari - jari. Faktor arah aksial dan radial tidak memberikan pengaruh terhadap frekuensi pembuluh, proporsi parenkim dan proporsi serat. Interaksi arah aksial dan radial memberikan pengaruh terhadap panjang serat, diameter serat, diameter lumen, tebal dinding serat dan frekuensi jari - jari.

Kata Kunci : *Broussonettia papyrifera*, Dimensi Serat, Proporsi serat

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**FIBER DIMENSION AND CELL PROPORTION OF SAEH WOOD
(*BROUSSONETTIA PAPYRIFERA* L. VENT) IN RADIAL AND AXIAL
DIRECTIONS GROWN IN PRACIMANTORO, WONOGIRI.**

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ABSTRACT

Broussonetia papyrifera also known as saeh wood, is a type of plant that grows in Indonesia. In Wonogiri, precisely in Pracimantoro, this plant is utilized by the community for its bark part while the log part is still underutilized. The lack of utilization is due to lack of knowledge about the anatomy of the wood such as wood dimensions and wood proportions. This study aims to determine the fiber dimensions and cell proportions of saeh wood in the axial, radial, and interaction between axial - radial directions of saeh wood in order to determine the proper processing and allocation of wood.

Microscopic characteristics of saeh wood were observed in reference to the IAWA Committee standard (1989). Wood cell proportion samples were sliced samples in the transverse and radial planes obtained by slicing wood block samples using a sliding microtome; and maceration samples using the franklin method. Variations in cell proportions and dimensions were then analyzed using two-way ANOVA.

The results showed that saeh wood has an average cell dimension measurement result of 969.89 ± 222.75 μm fiber length, 22.50 ± 6 μm fiber diameter, 17.35 ± 5 μm fiber lumen diameter, 2.58 ± 1.02 μm fiber wall thickness, 10.99 n/mm² vessel frequency, 8.39 n/mm² radius frequency. The results of cell proportion measurements showed an average fiber proportion of 70.48%, parenchyma proportion of 9.14%. Axial direction factor influences fiber length, fiber diameter, fiber lumen, fiber wall thickness. Radial direction factor influences fiber length, fiber diameter, fiber lumen diameter, fiber wall thickness and fingering frequency. Axial and radial direction factors did not affect vessel frequency, parenchyma proportion and fiber proportion. The interaction of axial and radial direction influences fiber length, fiber diameter, lumen diameter, fiber wall thickness and fingering frequency.

Keywords: *Broussonetia papyrifera*, Fiber Dimension, Fiber proportion

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