

**VARIASI PROPORSI SEL DAN DIMENSI SERAT KAYU GMELINA  
(*Gmelina arborea* Roxb. ) JENIS PERMUDAAN BIJI DAN TRUBUSAN  
PADA ARAH RADIAL DARI BOJONEGORO**

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**INTISARI**

Budidaya *gmelina* (*Gmelina arborea* Roxb.) dapat dilakukan secara generatif maupun vegetatif. Salah satu jenis permudaan secara vegetatif berupa trubusan, tetapi penelitian mengenai variasi anatomi kayu dari pohon hasil permudaan yang berbeda belum banyak dilakukan. Oleh karena itu, perlu diketahui proporsi sel dan dimensi serat dari jenis trubusan agar penggunaan kayunya dapat optimal.

Penelitian ini menggunakan rancangan acak lengkap dengan 2 faktor yaitu jenis permudaan (biji dan trubusan) serta arah radial per satu cm dari dekat hati menuju kulit (R1, R2, R3, R4, R5, R6, R7, R8, dan R9) masing-masing diulang sebanyak 2 kali. Parameter uji yang dilakukan meliputi proporsi sel (pembuluh, parenkim, jari-jari, dan serabut) serta dimensi serat (panjang serat, diameter serat, diameter lumen, dan tebal dinding serat). Hasil dari parameter-parameter uji tersebut kemudian dianalisis dengan menggunakan program statistik SPSS. Pembuatan contoh uji mengacu pada pedoman LPHH.

Hasil penelitian menunjukkan bahwa proporsi sel pembuluh, sel parenkim, sel jari-jari, dan serabut pada permudaan biji berturut-turut sebesar 7,54%, 11,47%, 24,60%, dan 56,39%. Panjang serat, diameter serat, diameter lumen, dan tebal dinding serat sebesar 0,968 mm, 22,22  $\mu$ m, 19,91  $\mu$ m, dan 1,156  $\mu$ m. Pada permudaan trubusan rata-rata proporsi sel pembuluh, parenkim, jari-jari, dan serabut sebesar 8,652%, 10,48%, 19,84%, dan 61,03%. Nilai panjang serat, diameter serat, diameter lumen, dan tebal dinding serat berturut-turut sebesar 1,080 mm, 21,38  $\mu$ m, 19,13  $\mu$ m, dan 1,124  $\mu$ m. Faktor jenis permudaan berpengaruh nyata terhadap proporsi sel jari-jari, sel serabut, dan nilai panjang serat. Faktor arah radial per satu cm tidak berpengaruh nyata terhadap nilai proporsi sel dan dimensi serat.

Kata kunci: *gmelina*, trubusan, radial, proporsi sel, dimensi serat

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**RADIAL VARIATION IN THE WOOD CELLS PROPORTION  
AND FIBER DIMENSIONS OF GMELINA (*Gmelina arborea* Roxb.)  
REGENERATION BY SEED AND COPPICE METHOD FROM  
BOJONEGORO**

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**ABSTRACT**

The silviculture system of *Gmelina arborea* Roxb. can be done by generative or vegetative regeneration. One method of vegetative regeneration is a coppice method but not much data collection about wood anatomy research from different tree regeneration. In order for optimal uses of wood, so we need to know about cells proportion and fiber dimensions of wood from coppice method.

This study used Completely Randomized Design with two factors namely regeneration method (seed and coppice method) and radial position by each centimeter from pith to bark (R1, R2, R3, R4, R5, R6, R7, R8, and R9) with two replications. Parameters which tested involve proportion of cells (vessel, parenchyma, rays, fiber) and fiber dimensions (fiber length, fiber diameter, lumen diameter, and fiber wall thickness). All parameters will be evaluated using SPSS Statistical Program. Preparation of test samples followed the LPHH guidance.

The result of this study showed that proportion of vessel, parenchyma, rays, and fiber from seed regeneration in consecutively is 7,54%, 11,47%, 24,60%, and 56,39%. Fiber length, fiber diameter, lumen diameter, and fiber wall thickness from seed regeneration is 0,968 mm, 22,22  $\mu$ m, 19,91  $\mu$ m, and 1,156  $\mu$ m. The average proportion of vessel, parenchyma, rays, and fiber from coppice method is 8,652%, 10,48%, 19,84%, and 61,03%. The value of fiber length, fiber diameter, lumen diameter, and fiber wall thickness in consecutively is 1,080 mm, 21,38  $\mu$ m, 19,13  $\mu$ m, and 1,124  $\mu$ m. The regeneration method factor was significant affected on rays proportion, fiber proportion, and fiber length. Radial variation by each centimeter factor was not significant affected on wood cells proportion and fiber dimensions.

**Keywords:** gmelina, coppice method, radial, cell proportion, fiber dimension

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