VARIASI AKSIAL DAN RADIAL DIMENSI SERAT, SIFAT FISIKA DAN MEKANIKA, SERTA TEGANGAN PERTUMBUHAN PERMUKAAN KAYU JABON (*Neolamarckia cadamba* Miq.)

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INTISARI

Kayu cepat tumbuh seringkali mengalami kendala saat diolah akibat tingginya tingkat tegangan pertumbuhan. Salah satu jenis kayu cepat tumbuh yang banyak ditanam di hutan rakyat di Pulau Jawa adalah kayu jabon (*Neolamarckia cadamba*). Penelitian ini bertujuan untuk menganalisis variasi tegangan pertumbuhan pada kayu jabon, berikut korelasinya dengan sifat dasar kayunya. Metode *strain gauges* digunakan untuk mengukur pelepasan regangan pertumbuhan permukaan pada periferi pohon. Hasil penelitian menunjukkan rerata pelepasan regangan longitudinal (PRL) permukaan berkisar antara -33 με hingga 480 με, sedangkan kisaran nilainya pada arah tangensial (PRT) permukaan antara -150 με hingga -293 με. Nilai pelepasan regangan permukaan baik pada arah longitudinal maupun tangensial tidak menunjukkan keragaman pada arah aksial. Nilai PRL permukaan berkorelasi paling kuat dengan panjang serat dan penyusutan longitudinal, sedangkan PRT permukaan berkorelasi erat dengan dengan diameter serat. Sementara itu, beberapa sifat kayu menunjukkan keragaman pada arah aksial dan radial. Kadar air kering udara, berat jenis kering udara, dan berat jenis kering tanur menunjukkan keragaman pada arah aksial. Keragaman pada arah radial terlihat pada parameter panjang serat, kadar air segar, berat jenis, dan kekuatan lengkung statis.

Kata kunci: Pelepasan regangan permukaan, strain gauges, variasi sifat kayu, kekuatan lengkung statis

AXIAL AND RADIAL VARIATION OF FIBER DIMENSION, PHYSICAL AND MECHANICAL PROPERTIES, AND SURFACE GROWTH STRESS OF JABON WOOD (*Neolamarckia cadamba* Miq.)

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ABSTRACT

Fast-growing wood species frequently has processing problem due to high levels of growth stress. Jabon (Neolamarckia cadamba Miq.) is one of important fast-growing wood species widely planted at community forest in Java Island. This research aims to analyze growth stress variation within jabon wood, followed by its correlation with wood properties. Strain gauges method was used to measure released strain at stem periphery. The result showed that surface released strain (SRS) at longitudinal direction was -33 με to 480 με, whereas tangential SRS was -150 με to -293 με. Released strain at surface stem has not showed variation among axial direction. Longitudinal SRS shows highest correlation with fiber length and longitudinal shrinkage, whereas tangential SRS shows highest correlation with fiber width. Meanwhile, some of wood properties shows variation within stem at axial and radial direction. Air-dry moisture content, air-dry specific gravity, and oven-dry specific gravity shows variation at axial direction. On the other hand, radial variation has found at fiber length, green moisture content, specific gravity, and static bending strength.

***Keywords**: Surface released strain, strain gauges, wood variation, static bending strength*