

**PENGARUH LETAK AKSIAL DAN LAMA IMPREGNASI CAMPURAN
PHENOL FORMALDEHIDA DENGAN BAHAN PENGAWET
KLORPIRIFOS TERHADAP SIFAT Pengerjaan KAYU JABON
MERAH**

Nabila Zahrah Salsabila¹, Tomy Listyanto²

INTISARI

Jabon Merah (*Neolamarckia macrophylla*) merupakan jenis pohon cepat tumbuh yang berpotensi untuk produk furniture. Kayu jabon memiliki keunggulan tingkat kelurusan batang yang sangat bagus dan tekstur halus. Kayu jabon merah memiliki berat jenis yang rendah sehingga menjadi kendala utama dalam pemanfaatannya. Kelas kuat dan kelas awet yang rendah dapat diatasi dengan impregnasi. Penelitian ini bertujuan untuk mengetahui pengaruh interaksi letak aksial dan lama impregnasi campuran phenol formaldehida dan bahan pengawet klorpirifos terhadap sifat pengerjaan kayu jabon merah.

Sampel kayu diperoleh dari petak 17 KHDTK Wanagama I. Pengujian sifat pengerjaan mengikuti standar ASTM D-1666-64, meliputi pengetaman, penggergajian, pengeboran, pengamplasan, dan pembubutan. Sedangkan uji fisika dan mekanika mengikuti BS 373:1957, meliputi berat jenis, kekerasan, dan stabilitas dimensi. Rancangan yang digunakan pada penelitian ini adalah rancangan acak lengkap dan analisis varian pada taraf uji 5%, serta uji lanjut HSD Tukey. Faktor penelitian ini yaitu lama impregnasi (3 hari dan 5 hari) dan letak aksial (pangkal, tengah, ujung), serta kontrol tanpa perlakuan impregnasi. Larutan impregnasi menggunakan PF 15%, klorpirifos 1%, dan aquades.

Faktor lama impregnasi dan letak aksial serta interaksi keduanya tidak berpengaruh nyata pada sifat pengerjaan kayu. Faktor letak aksial berpengaruh nyata terhadap kadar air, berat jenis, absorpsi, dan retensi kayu. Faktor lama impregnasi berpengaruh nyata terhadap kadar air kayu dan berat jenis. Pada pengujian sifat pengerjaan meliputi uji pengetaman, penggergajian, pengamplasan, pengeboran, dan pembubutan masing-masing memiliki nilai rata-rata bebas cacat permukaan sebesar 94,51%; 95,11%; 98,28; 96,85%; dan 95,4%. Berdasarkan nilai tersebut, maka sifat pengerjaan kayu jabon merah termasuk kategori kelas I.

Kata Kunci: Impregnasi, Jabon Merah, Letak Aksial, Phenol Formaldehida, Sifat Pengerjaan.

¹ Mahasiswa Fakultas Kehutanan UGM

² Staff Pengajar Fakultas Kehutanan UGM

THE EFFECT OF AXIAL POSITION AND IMPREGNATION DURATION OF PHENOL FORMALDEHYDE MIXED WITH CHLORPYRIFOS PRESERVATIVE ON THE WORKABILITY PROPERTIES OF RED JABON WOOD

Nabila Zahrah Salsabila¹, Tomy Listyanto²

ABSTRACT

Red Jabon (Neolamarckia macrophylla) is a fast-growing species with potential for furniture production. It also has excellent trunk straightness and smooth texture. Red Jabon wood has a low specific gravity, which is a major constraint on its utilization. Low strength and durability can be overcome through impregnation. This study aimed to determine the interaction effect of axial position and impregnation duration of phenol formaldehyde mixed with chlorpyrifos preservatives on the working properties of red jabon wood.

Wood samples were obtained from plot 17 of KHDTK Wanagama I. Working properties were tested according to ASTM D-1666-64 standard, which includes planing, sawing, boring, sanding, and turning. Physical and mechanical tests followed BS 373:1957, covering specific gravity, hardness, and dimensional stability. The design used in this study was a CRD with ANOVA at the 5% level of significance, as well as Tukey's HSD test. The factors in this study were impregnation duration (3 and 5 days) and axial location (bottom, middle, and upper), and control without impregnation treatment. The impregnation consisted of 15% PF, 1% chlorpyrifos, and distilled water.

The impregnation duration and axial location, as well as their interaction, did not significantly affect the wood's workability. Axial location significantly affected moisture content, specific gravity, absorption, and wood retention. Impregnation duration significantly affected wood moisture content and specific gravity. The working properties, which include planing, sawing, sanding, boring, and turning, each had an average surface defect-free value of 94,51%; 95,11%; 98,28%; 96,85%; and 95,4%. Based on these values, the working properties of red jabon wood is categorized as class I.

Keywords: Axial Position, Impregnation, Phenol Formaldehyde, Red Jabon, Wood Properties.

¹ Student of Faculty of Forestry UGM

² Lecturer of Faculty of Forestry UGM