

**ASSESSING THE INFLUENCE OF INITIAL MOISTURE CONTENT
AND DENSITY ON RUBINATE UPTAKE BY MICROWAVE-DRIED
SITKA SPRUCE WOOD**

**(Uji Pengaruh Kadar Air Awal dan Kerapatan Kayu terhadap Penyerapan
Rubinate oleh Sitka Spruce yang Dikeringkan dengan Energi Mikrowave)**

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ABSTRAK

Penggunaan gelombang mikro direkomendasikan untuk meningkatkan permeabilitas kayu Sitka spruce. Akan tetapi, kayu yang diproses dengan gelombang mikro yang dipancarkan melalui aplikator terowong cenderung mengalami kerusakan struktur, terutama patahnya sel-sel jari-jari. Proses impregnasi kayu dengan resin, seperti rubinate, diharapkan dapat mengatasi masalah tersebut. Beberapa faktor perlu diperhatikan dalam proses impregnasi kayu dengan bahan kimia. Beberapa faktor internal kayu yang berperan adalah tipe noktah antar sel, kadar air kayu awal dan kerapatan. Penelitian dilakukan untuk menguji pengaruh kadar air awal dan kerapatan kayu Sitka spruce yang dikeringkan dengan gelombang mikro terhadap penyerapan rubinate. Hasil yang diperoleh menunjukkan bahwa penyerapan rubinate lebih dipengaruhi oleh kadar air awal kayu dan tidak dipengaruhi oleh kerapatan kayu.

Kata kunci : Kadar air, kerapatan, Sitka spruce, gelombang mikro, rubinate

ABSTRACT

The use of microwave energy is recommended to improve the permeability of Sitka spruce wood that is known as refractory or difficult-to-chemically treat species. However, wood processed with microwave energy emitted through waveguide applicator tends to get some wood structure rupture, particularly their ray cells. Impregnating the microwave-processed wood with resins, such as rubinate, is opted to solve this problem. To successfully impregnate wood with chemical materials should consider factors that may influence the process. Some internal factors of the wood that may affect the treatment process are pit type, initial moisture content and density. The experiment was carried out to assess the influence of initial moisture content and density of microwave-processed Sitka spruce wood on its ability to absorb the rubinate resin. The result showed that rubinate uptake was affected significantly by initial moisture content and less affected by the wood density.

Keywords: Moisture content, density, Sitka spruce, microwave, rubinate