

## PENGARUH ARAH RADIAL DAN PERLAKUAN PEREBUSAN TERHADAP SIFAT KIMIA KAYU SENGON (*Falcataria moluccana* Miq.)

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### INTISARI

Sengon (*Falcataria moluccana* Miq.) merupakan salah satu jenis kayu yang banyak diminati oleh masyarakat Indonesia karena termasuk jenis kayu cepat tumbuh. Salah satu penggunaan adalah untuk kayu lapis yang dalam prosesnya membutuhkan modifikasi untuk meningkatkan kualitas finirnya. Upaya modifikasi yang dilakukan dengan melakukan perebusan sebelum proses pengupasan. Meskipun demikian informasi sifat kimia kayu dengan perlakuan perebusan masih sangat terbatas. Penelitian ini bertujuan untuk mengetahui pengaruh perebusan dan arah radial terhadap sifat kimia kayu sengon.

Penelitian menggunakan sampel kayu sengon berumur 7 tahun (3 pohon) dengan perlakuan kontrol dan perebusan pada suhu 80°C yang terbagi menjadi bagian dekat hati, tengah, dan dekat kulit. Kemudian sampel tersebut dibuat serbuk dengan ukuran 40-60 mesh untuk dilakukan pengujian sifat kimia kadar ekstraktif etanol-toluena, ekstrak air panas, kadar holoselulosa, kadar alfaselulosa, kadar hemiselulosa, kadar lignin, kadar abu dan silika, serta nilai pH. Desain penelitian dilakukan menggunakan rancangan acak lengkap (*Completely Randomized Design*) dengan analisis *one-way ANOVA* dan *t-test*.

Dari hasil pengujian analisis kimia kayu sengon didapatkan hasil sebagai berikut, yaitu : kadar holoselulosa, alfa-selulosa, hemiselulosa, dan lignin adalah 74,86-76,21%; 47,99-48,81%; 26,84-27,30%; dan 26,58-30,81% secara berurutan. Ekstraktif etanol-toluena dan ekstrak air panas berkisar 2,68-4,92% dan 2,51-2,80% secara berurutan. Kadar abu, kadar silika, dan nilai pH adalah 0,78-1,04%; 0,37-0,50%; dan 5,82-6,01 secara berurutan. Faktor arah radial dan perlakuan perebusan hanya memberikan perbedaan yang nyata pada kadar ekstraktif larut etanol-toluena yaitu semakin dekat kulit kadar ekstraktif etanol-toluena semakin tinggi dan mengalami penurunan setelah perebusan (dari 4,36% ke 3,5%).

Kata Kunci: Sengon, perebusan, arah radial, kimia kayu, kayu lapis

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## EFFECT OF RADIAL DIRECTION AND BOILING TREATMENT ON CHEMICAL PROPERTIES OF SENGON (*Falcataria moluccana* Miq.) WOOD

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### ABSTRACT

Sengon (*Falcataria moluccana* Miq.) is one of the wood species in great demand due to it is a fast-growing properties. One of its utilization is for plywood, which is in the process needs modification to improve its veneer quality. Modification efforts made by boiling before the peeling process. However, the information on the chemical properties of the treated wood remain limited. Therefore, research aims to determine the effect of boiling and radial direction on the chemical properties of sengon wood.

The study used samples of 7-year-old sengon wood (3 individual trees) with control and boiling treatment at 80°C. The wood specimens divided into near-heartwood, middle, and near-bark sections. The samples were then ground into 40-60 mesh-sized powder for chemical properties testing, including contents of extractive ethanol-toluene, hot-water solubility, holocellulose, alpha-cellulose, hemicellulose, lignin, ash, silica, and pH value. The research design employed a completely randomized design with one-way ANOVA and t-test analysis.

The result of the chemical analysis of the sengon wood were as follows: holocellulose, alpha-cellulose, hemicellulose, and lignin contents were 74.86-76.21%; 47.99-48.81%; 26.4-27.30%; and 26.58-30.81% respectively. Ethanol-toluene extractives and hot-water solubility contents were 2.68-4.92% and 2.51-2.80% respectively. Ash content, silica content, and pH values were 0.78-1.04%; 0.37-0.50%; and 5.82-6.01 respectively. The radial direction and boiling treatment showed significant differences only in the ethanol-toluene extractive content. It showed the content increased at near bark part and decreased after boiling (4.36% to 3.5%).

*Key words: Sengon, boiling treatment, the radial direction, chemical properties, plywood*

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