

VARIASI SIFAT KIMIA KAYU BUSH MERAH (*Lophostemon suaveolens* (Sol.ex Gaertn.)) PADA ARAH AKSIAL DAN RADIAL UMUR 4 TAHUN

Oleh:

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INTISARI

Kayu bush merah (*Lophostemon suaveolens* (Sol.ex Gaertn.)) merupakan jenis pohon yang dapat ditemui pada ekosistem gambut dan termasuk ke dalam golongan jenis yang kurang dikenali (*lesser known*). Pohon bush merah memiliki beberapa keunggulan seperti memiliki sifat adaptabilitas yang tinggi dan termasuk jenis pohon cepat tumbuh. Penelitian yang dilakukan mengenai sifat kimia kayu bush merah masih terbatas. Oleh karena itu, penelitian ini dilakukan untuk menganalisis komposisi kimia kayu bush merah. Hasil penelitian ini diharapkan dapat meningkatkan pemanfaatan kayu bush merah dalam upaya strategi pemuliaan untuk meningkatkan produktivitas dan penggunaannya.

Penelitian ini menggunakan sampel kayu bush merah berumur 4 tahun yang diambil dari lahan gambut HTI PT Arara Abadi sebanyak 3 pohon sebagai pengulangan. Penelitian ini menggunakan kombinasi arah aksial dan radial dalam pembagian kayu mencakup pangkal-dekat hati, pangkal-dekat kulit, tengah-dekat hati, tengah-dekat kulit, dan ujung. Sampel dibuat menjadi serbuk berukuran 40 - 60 mesh yang dipakai untuk pengujian seperti kadar ekstraktif etanol-toluena, kadar ekstraktif air panas, kadar ekstraktif total, kadar holoselulosa, kadar alfa-selulosa, kadar lignin, kadar abu, kadar silika, dan nilai pH. Penelitian ini menggunakan desain rancangan acak lengkap faktor tunggal dengan analisis data menggunakan *one-way* Anova.

Dari hasil penelitian yang didapatkan, kayu bush merah umur 4 tahun memiliki kadar ekstraktif larut etanol-toluena berkisar 3,54 - 4,44 %; kadar ekstraktif larut air panas berkisar 0,97 - 1,73 %; kadar ekstraktif total berkisar 4,85 - 5,80 %; kadar holoselulosa berkisar 71,78 - 78,61 %, kadar alfa-selulosa berkisar 44,71 - 46,32 %; kadar hemiselulosa berkisar 25,91 - 33,72 %; kadar lignin berkisar 25,41 - 30,54 %; kadar abu berkisar 0,68 - 0,96 %; kadar silika berkisar 10,63 - 37,89 ppm; dan nilai pH berkisar 5,42 - 5,92. Variasi sifat kimia pada bagian kayu bush merah umur 4 tahun dari analisis keragaman menunjukkan perbedaan nyata untuk kadar ekstraktif larut etanol-toluena, kadar alfa-selulosa, kadar hemiselulosa, kadar lignin, dan nilai pH, sedangkan kadar ekstraktif larut air panas, kadar ekstraktif total, kadar holoselulosa, kadar abu, dan kadar silika tidak menunjukkan perbedaan nyata.

Kata Kunci: Bush merah, kurang dikenali, cepat tumbuh, sifat kimia

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VARIATION OF CHEMICAL PROPERTIES OF 4 YEARS OLD BUSH MERAH WOOD (*Lophostemon suaveolens* (Sol.ex Gaertn.)) IN AXIAL AND RADIAL DIRECTIONS

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ABSTRACT

Bush merah wood (*Lophostemon suaveolens* (Sol.ex Gaertn.)) is a type of tree found in peat ecosystems and is included in the lesser-known species. Bush merah has several advantages such as having high adaptability and being a fast-growing species. Meanwhile, research on the chemical properties of bush merah wood is still limited. Therefore, this study was conducted to analyze the chemical composition of bush merah. The results of this study were expected to enhance the utilization of bush merah trees in breeding strategies to increase productivity and usage.

This research uses 4-year-old bush merah wood samples from HTI PT Arara Abadi (peatland site), with 3 individuals for replication. The study combined axial and radial directions including bottom-near pith, bottom-near bark, middle-near pith, middle-near bark, and top. The samples were converted into wood powder with a mesh size of 40 - 60 for chemical properties testing, including ethanol-toluene extractives content, hot water extractives content, total extractives content, holocellulose content, alpha-cellulose content, lignin content, ash content, silica content, and pH value. The study employed a completely randomized design with a single factor with data analysis using one-way ANOVA.

The results of the research that 4-year-old bush merah wood had the following properties: ethanol-toluene extractives range from 3.54 - 4.44 %; hot water extractives range from 0.97 - 1.73 %; total extractives range from 4,85 - 5,80 %; holocellulose content range from 71.78 - 78.61 %; alpha-cellulose content range from 44.71 - 46.32 %; hemicellulose content range from 25.91 - 33.72 %; lignin content range from 25.41 - 30.54 %; ash content range from 0.68 - 0.96 %; silica content range from 10.63 - 37.89 ppm; and pH value range from 5.42 - 5.92. Bush merah chemical properties variations from ANOVA gave significant results on ethanol-toluene extractive content, alpha-cellulose content, hemicellulose content, lignin content, and pH value, while hot water extractive content, total extractive content, holocellulose content, ash content, and silica content did not show significant results.

Keywords: Bush merah, lesser-known, fast-growing, chemical properties

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