INTISARI

Sifat Kimia Kayu Jati (*Tectona grandis*) dari Hutan Rakyat di Tiga Zona Kabupaten Gunungkidul

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Kebutuhan akan kayu sebagai bahan konstruksi terus mengalami peningkatan. Salah satu spesies yang diminati oleh masyarakat adalah kayu Jati (*Tectona grandis*) yang terkenal memiliki kekuatan kosntruksi dan keawetan alami yang tinggi. Kualitas kayu Jati dapat dipengaruhi salah satunya oleh sifat kimia. Kayu Jati hutan rakyat diketahui memiliki umur panen yang relatif muda. Khususnya di Gunungkidul, hutan rakyatnya juga telah tumbuh kayu Jati yang tersebar di daerah-daerah dengan karakteristik berbeda. Oleh karena itu dilakukan penelitian tentang sifat kimia kayu Jati akibat pengaruh faktor tempat tumbuh dan posisi radial di tiga zona Kabupaten Gunungkidul.

Pohon diambil dari tiga tempat berbeda, yaitu dari Nglipar, Panggang, dan Playen, yang berdiameter dbh 28-37 cm. Setiap tempat diambil 3 pohon sebagai ulangan. Sampel yang digunakan adalah disk dengan ketebalan 5 cm, yang diambil dari bagian pangkal. Penampang radial disk dibagi menjadi 3 bagian, yaitu gubal, teras luar, dan teras dalam. Dari setiap bagian, diambil serbuk berukuran 40-60 mesh untuk diuji sifat kimia kayunya. Sifat kimia yang diuji adalah kadar holoselulosa, kadar alfaselulosa, kadar hemiselulosa, kadar lignin, kadar ekstraktif alkohol toluen, kadar ekstraktif air panas, kadar kelarutan dalam NaOH 1%, kadar abu (ASTM), kadar abu tak larut asam (TAPPI), dan nilai pH. Sebagai kontrol digunakan kayu Jati yang berumur 70 tahun.

Kisaran nilai kimia dari Jati hutan rakyat adalah kadar holoselulosa 75,76-79,74 %, alfaselulosa 46,72-50,90 %, hemiselulosa 27,41-30,14 %, lignin 29,22-32,80 %, kelarutan dalam NaOH 1% 16,43-17,35 %, ekstraktif larut alkohol toluen 5,04-10,77 %, ekstraktif larut air panas 2,74-7,85 %, abu 0,60-1,66 %, abu tak larut asam 1750-5867 ppm, dan nilai pH 5,54-6,27. Interaksi antara kedua faktor berpengaruh nyata pada kadar holoselulosa, alfaselulosa, hemiselulosa, dan ekstraktif larut alkohol toluen. Faktor tempat tumbuh berpengaruh nyata pada kadar abu dan abu tak larut asam. Faktor radial berpengaruh nyata pada kadar ekstraktif larut air panas dan kadar abu. Dari penelitian juga diketahui bahwa pada kayu Jati Perhutani, kadar lignin, kadar ekstraktif alkohol toluen, kadar kelarutan dalam NaOH 1%, kadar abu, kadar abu tak larut asam, dan nilai pH cenderung lebih tinggi daripada kayu Jati dari hutan rakyat, namun kadar holoselulosa, kadar alfaselulosa, kadar hemiselulosa, dan kadar ekstraktif larut air panas lebih rendah.

Kata kunci: *Tectona grandis*, sifat kimia, hutan rakyat, arah radial, Gunungkidul

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ABSTRACT

Chemical Characteristics of Teak (*Tectona grandis*) From Community Forests in Three Forest Zone Gunungkidul District

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The need of wood for construction materials continues to increase. One of the demanded species by the people is teak (*Tectona grandis*), which is known to have a good construction strength and natural resistance. Teak wood quality can be affected by many factors which one of them is chemical properties. Community teak forest harvesting is known to have a relatively young age. Particularly in Gunungkidul, its teak forests also grow in scattered areas with different characteristics. Therefore, the research on the chemical properties of teak wood due to the effect of the growth site and radial positions in three zones in the Gunungkidul district was conducted.

Trees were taken from three different places, namely from Nglipar, Panggang, and Playen, dbh 28-37 cm. Three trees were taken from each plot as replicants. The samples used were disks with a thickness of 5 cm, taken from the base of the trees. The disk in radial cross section was divided into 3 parts: sapwood, outer heartwood, and inner heartwood. From each section, the powder was ground to 40-60 mesh size for chemical property tests. Chemical properties were holocellulose content, alfacellulose content, hemicellulose content, lignin content, alcohol-toluene extractive content, hot water extractive content, solubility in NaOH 1%, ash content (ASTM), acid insoluble ash content (TAPPI), and pH value. Teak woods of 70 years were used as controls.

The chemical property values of comunity teak forest are holocellulose content of 75,76-79,74 %, alfacellulose content of 46,72-50,90 %, hemicellulose content of 27,41-30,14 %, lignin content of 29,22-32,80 %, solubility in NaOH 1% of 16,43-17,35 %, alcohol-toluene extractive content of 5,04-10,77 %, hot water soluble extractives content of 2,74-7,85 %, ash content of 0,60-1,66 %, acid insoluble ash content of 1750-5867 ppm, and pH value of 5,54-6,27. Interaction between two factors affects significantly in the levels of holocellulose, alfacellulose, hemicellulose, and alcohol-toluene extractive content. The growth site has a significant effect on the ash contens as well as acid insoluble ash content. Radial factor has a significant effect on the levels of hot water soluble extractives and ash content. From the research, it was also found that the lignin content, alcohol-toluene extractive content, solubility in NaOH 1%, ash content, acid insoluble ash content, and pH values of Perhutani teak wood tend to be higher than those of the teak community forests. However, the holocellulose, alfacellulose, hemicellulose, and hot water soluble extractive content levels are lower than those of the teak community forest.

Key words: *Tectona grandis*, chemical properties, community forest, radial section, Gunungkidul

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