SIFAT ANATOMI DAN FISIKA KAYU NYAMPLUNG (*Calophyllum inophyllum*) PADA KEDUDUKAN RADIAL DARI TIGA PROVENAN YANG DITANAM DI GUNUNGKIDUL

Oleh :

Alif Brilianto[1], Fanny Hidayati [2], dan Eritrina Windyarini [3]

INTISARI

Nyamplung (*Calophyllum inophyllum*) merupakan salah satu jenis tanaman tropis yang umumnya dijumpai di daerah pesisir pantai. Pemanfaatan kayu nyamplung salah satunya yaitu sebagai bahan baku pembuatan perahu. Informasi mengenai sifat anatomi dan fisika kayu nyamplung (*Calophyllum inophyllum*) masih sangat terbatas. Kayu nyamplung diambil dari tiga provenan yaitu provenan Gunungkidul, Sumenep, dan Bali Timur yang dibangun oleh BBPPBPTH di Tahura Bunder, Gunungkidul. Penelitian ini bertujuan untuk mengetahui sifat anatomi dan fisika kayu nyamplung pada kedudukan radial dari tiga provenan berbeda.

Hasil penelitian menunjukkan rerata dimensi sel panjang serat 0,971 mm, diameter serat 12,03 μm, diameter lumen serat 8,284 μm, tebal dinding serat 1,865 μm, diameter pembuluh 101,5 μm. Hasil pengukuran proporsi sel menunjukkan rerata proporsi pembuluh sebesar 7,25%, proporsi jari-jari 8,957%, proporsi parenkim 10,22 %, dan proporsi serat 73,58 %. Rerata kadar air basah dan kadar air kering udara berurutan sebesar 56,59 % dan 15,76 %. Sedangkan untuk berat jenis basah, kering udara, dan kering tanur sebesar 0,572; 0,592; dan 0,654. Berdasarkan analisis keragaman, faktor kedudukan radial memberikan pengaruh terhadap panjang serat, tebal dinding serat, diameter pembuluh, proporsi pembuluh, proporsi parenkim, proporsi serat, kadar air basah, kadar air kering udara, berat jenis basah dan berat jenis kering udara. Faktor perbedaan provenan memberikan pengaruh terhadap panjang serat, diameter serat, diameter lumen serat, berat jenis basah dan berat jenis kering udara. Sementara interaksi kedudukan radial dan perbedaan provenan tidak memberikan pengaruh signifikan terhadap sifat anatomi dan fisika.

Kata Kunci: *Calophyllum inophyllum*, dimensi sel, proporsi sel, sifat fisika, kedudukan radial, perbedaan provenan.

[1] Mahasiswa Fakultas Kehutanan Universitas Gadjah Mada, Yogyakarta

[2] Staff Pengajar Fakultas Kehutanan Universitas Gadjah Mada, Yogyakarta

[3] Pengendali Ekosistem Hutan Ahli Muda pada Bidang Pengujian dan Validasi Standar Instrumen Balai Besar Pengujian Standar Instrumen Kehutanan

ANATOMICAL AND PHYSICAL PROPERTIES OF NYAMPLUNG (*Calophyllum inophyllum*) WOOD AT RADIAL POSITION FROM THREE PROVENANCES PLANTED IN GUNUNGKIDUL

By :

Alif Brilianto[1], Fanny Hidayati[2], dan Eritrina Windyarini[3]

ABSTRACT

Nyamplung (*Calophyllum inophyllum*) is one of tropical plants that can be found in coastal areas. As a raw timber, nyamplung wood is usually used to make boats. Considering the utilization of nyamplung wood, the information about anatomical and physical properties of nyamplung wood are still limited. This study used nyamplung wood with three different provenances such as Gunungkidul, Sumenep, and Bali Timur taken from a trial plot located in Tahura Bunder, Gunungkidul built by BBPPBTH. This study was conducted to observe the radial position of anatomical and physical properties of nyamplung from three provenances palnted in Gunungkidul.

The result shows that the woods of *C. inophyllum* have the average cell dimension such as fiber length of 0,971 mm, fiber diameter 12,03 μm, fiber lumen diameter 8,284 μm, fiber wall thickness 1,865 μm, vessel diameter 101,5 μm. The average proportions of *C. inophyllum* consist of 7,250% wood vessels, 8,957 % of rays, 10,22 % of parenchyma, and 73,58 % of fibers. The average of moisture content both fresh and air-dry by 56,59 % and 15,76 % respectively, while fresh, air dry, and kiln dry specific gravity are 0,572; 0,592; and 0,654. The analysis shows that the radial position has a high significant effect on several parameters such as fiber length, fiber wall thickness, vessel diameter, vessel proportion, parenchyma proportion, rays proportion, fresh moisture content, air dry moisture content, fresh specific gravity, and air dry specific gravity. The different provenances have significant effects on several parameters such as fiber length, fiber diameter, fiber lumen diameter, fresh specific gravity, and air-dry specific gravity. However, the interaction between radial position and different provenance does not make significant differences in anatomical and physical properties.

Keywords: *Calophyllum inophyllum*, cell dimensions, cell proportions, physical properties, radial position, different provenance.

[1] Student of Faculty of Forestry Universitas Gadjah Mada, Yogyakarta

[2] Lecturer of Faculty of Forestry Universitas Gadjah Mada, Yogyakarta

[3] Forest Ecosystem Controller, Center for Forestry Instrument Standard Assessment