ANATOMICAL PROPERTIES OF 5 AND 10 YEARS OLD SENTANG (*Azadirachta excelsa*)

by

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A Thesis Submitted in partial fulfillment of the requirements for the Bachelor of Science (Hons) in Furniture Technology

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October 1998

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ABSTRACT

A study on the tissue proportion s and fiber morphology of 5 and 10 year old Sentang was carried out. The source of material were harvested at Jalan Kampung Jawa, FRIM. Disks were taken from 3 sampling height and were sampled along their radial variation of heartwood at every sampling height. Procedure in obtaining the MC and Density are using ASTM D2016-74(83) and ASTM 2395-83. Method of sample preparation for micsoscopic examination are using Forest Product Research Laboratory Leaflet No.40, Wood Anatomy Training Course (FRIM 1993) and Franklin G.L Permanent Preparations of Macerated Wood Fibers, 1937: No.49 (21-22).

Analysis of variance (ANOVA) indicated that between year and height differences in all anatomical properties measured were significant except in fiber wall thickness which not significant between height. Significant differences in the tissue proportions were found among sampling zone. The mean of vessel diameter of 5 and 10 year old were 130.622 μm and 154.133 μm. The mean diameter first increased and then decreased with increasing height. The mean of vessel distribution of 5 and 10 year old were 12.28 no./mm^{2}and 9.418 no./mm^2. Both of 5 and 10 year old Sentang showed decreasing of vessel distribution with increasing height. The mean of ray height of 5 and 10 year old were 424.222 μm and 346.556 μm. The mean of ray distribution of 5 and 10 year old Sentang were 8.311 no./mm^2 and 6.844 no./mm^2. Ray elements showed decreasing in their height and distribution with increasing year and height. However its increase with increasing zone position.

Fiber length, fiber diameter and fiber lumen diameter decreased with increasing year and height for both of the years. The mean of fiber length of

5 and 10 year old Sentang ranged from 1.101 to 1.153 mm and 1.000 to 1.052 mm. The mean of fiber diameter of 5 and 10 year old ranged from 24.774 to 26.226μm and 23.074 to 24.526μm. The mean of lumen diameter of 5 and 10 year old ranged from 16.791 to 18.143μm and 12.757 to 14.109μm. Fiber wall thickness decreased with increasing year. The mean of fiber wall thickness of 5 and 10 year old ranged from 3.306 to 44.094 μm and 4.789 to 5.578 μm.