

**VERTICAL VARIATION OF FIBER PROPERTIES IN PINANG TREE**  
**(*Areca catechu*)**

By:

**MAIZURA NUURUL HASANAH BT IBRAHIM**

**Final Project Paper Submitted in Partial Fulfilment of the Requirements for the  
Diploma in Wood Industry, Faculty of Applied Sciences  
Universiti Teknologi MARA**

**APRIL 2006**

## **ACKNOWLEDGEMENT**

**“IN THE NAME OF ALLAH, MOST MERCIFUL AND COMPASSIONATE”**

In the name of Allah, I would love to express my gratitude to Allah, the Al-Mighty for giving me strength and spirit in completing this final project paper. Without His willingness and blessings, this project paper would not be a reality.

In completing this final project paper, I would love to express my deepest and sincere appreciation to the following peoples who in one way or another have helped in completing this project paper successfully.

To Prof. Dr. Suhaimi bin Muhammed for supervising my project paper and for giving me invaluable guidance, suggestions and advices throughout this research;

To Mr. Rudaini for providing research facilities and helping me during the laboratory experiments;

To Associate Prof. Dr. Jamaludin bin Kasim for his constructive critics and guidance;

To Mrs. Sa'diah bt Sahat for helping in SPSS package and statistical analysis

To my friends and classmates for their moral supports and accompany when I really need them; and

To my beloved parents and families for their consistent concern and prayers and always giving me courage and spirit especially when I'm nearly falling down and really need someone to be at my side and sharing everything with.

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**ABSTRACT**

The determination of fiber morphology of *Areca catechu* is based on the different height levels of the tree from the basal of the tree (0 % height), 20% height, 40% height, 60% height and 80% height levels (near top). Fiber characteristic in trees can be influence by the existence of knot at the tree, tension wood, the fiber position and also the specific gravity of the tree. The fiber were observed using the microscope to measure the fiber length, fiber diameter, cell wall thickness and lumen width. From the data, the Runkel Ratio, Felting Power and Coefficient of Suppleness values were determined. The longest length of fiber is obtained from 40 % height level with 3.7702 mm and the shortest is obtained from 20 % height level with 1.0083 mm. The largest diameter of *Areca* fiber is found at 60 % height level with 123.3  $\mu\text{m}$  and the smallest is from 0 % height level with 31.9  $\mu\text{m}$ . For lumen width, the highest value is obtained from 60 % height level with 111.7  $\mu\text{m}$  while the lowest is at 0 % height level with 10.4  $\mu\text{m}$ . The largest wall thickness for this species is found in 80 % height level with 24.40  $\mu\text{m}$  and the smallest is from 40 % height level with 2.50  $\mu\text{m}$ .