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

By:

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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 μm and the smallest is from 0 % height level with 31.9 μm. For lumen width, the highest value is obtained from 60 % height level with 111.7 μm while the lowest is at 0 % height level with 10.4 μm. The largest wall thickness for this species is found in 80 % height level with 24.40 μm and the smallest is from 40 % height level with 2.50 μm.