

**FIBER MORPHOLOGY OF OIL PALM FROND
ACCORDING TO DIFFERENT AGE GROUP**

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ABSTRACT

The fiber morphology of oil palm frond was studied for two different ages of oil palm tree obtained from the oil palm plantation at the Universiti Teknologi MARA Pahang branch. This study was conducted to determine the effect of age groups (8 and 11 years) and portions of oil palm frond (top, middle and bottom) on the fiber properties such as fiber length, fiber diameter, lumen width, and cell wall thickness. The effect on paper properties such as runkel ratio (RR), coefficient of suppleness (COS) and felting power (FP) was also studied. The result indicated that there was significant effect of the portion of oil palm frond but no significant effect exhibited by the age groups. Thus all the portion of oil palm frond can be use as raw material in the manufacture of fiber-based products especially paper products. The top portion (near trunk) of the oil palm frond has greater potential for the production of better quality paper products due to superior fiber properties and paper properties. Therefore the utilization of oil palm frond can be maximized in the hope to reduce waste from agriculture crops.