

**PROPERTIES OF PARTICLEBOARD FROM *ACACIA MANGIUM* IN RELATION TO  
TREE HEIGHT PORTIONS**

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**ABSTRACT**

This study was conducted on juvenile *Acacia mangium* to determine its effects of tree portion, resin content, basic properties, and moisture content. Ten pieces of 5 to 7 year-old acacia were obtained from the UiTM Jengka in Pahang. The trees are divided into three parts they are top, middle, and bottom portion. Urea Formaldehyde (UF) was used as a binder with three ratio resin content 8%, 10% and 12%. The properties of bending strength, internal bonding (IB), thickness swelling (TS) and water absorption (WA) were evaluated based on BS EN standard. The basic properties and moisture content determined carried out according to the Technical Association of the Pulp and paper Industry Standard (TAPPI). From the result, it showed that MOR and MOE value were perform better with particleboard using middle and bottom portion with 12% resin content. The IB strength was parallel with bending strength except for board using resin content 8% with top portion bonded with UF. TS and WA rate showed lower in particleboard using resin content 8% with top portion. The basic properties result showed that bottom part higher value compare to another. The middle and bottom part have same value and higher for moisture content. In conclusion, the portion of trees and resin content be used affected the properties of particleboard manufactured from *Acacia mangiun*.