

MECHANICAL PROPERTIES OF JUVENILE ACACIA MANGIUM

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ABSTRACT

MECHANICAL PROPERTIES OF JUVENILE *Acacia mangium*

Juvenile *Acacia mangium* was used as raw material in this study. The objectives of this study were to determine the mechanical properties *Acacia mangium* at different portions (top, middle and bottom) and different conditions (green and dry). The moisture content (MC) of the green and dry samples was 74% and 12% respectively. *Acacia mangium* was dried by using kiln dry in achieving 12% MC. Bending and compression testing were applied to all samples. From this study, it showed that there is significant different on bending properties (MOE) only at different portions and bottom portion had the highest bending properties, followed by middle and top portions. Compression properties are not influenced by different portions of *Acacia mangium*. For condition (green and dry), both testing were highly influenced by the moisture content of the samples. Bending and compression properties of dry samples are higher than green samples. Drying process enhanced the mechanical properties of *Acacia mangium*. *Acacia mangium* is suitable to be used in producing furniture. A furniture manufacturer or sawyers that want to use *Acacia mangium* should be concern regarding on the portions and the importance of drying process.