

**MECHANICAL AND PHYSICAL PROPERTIES OF PARTICLEBOARD  
FROM TWO DIFFERENT FAST GROWING SPECIES**

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## ABSTRACT

### MECHANICAL AND PHYSICAL PROPERTIES OF PARTICLEBOARD FROM TWO DIFFERENT FAST GROWING SPECIES

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In this study, the influences of particle size and resin content (RC) on mechanical and physical properties of particleboard manufactured from fast growing species raw material was determined. Two different fast growing species was choosing in this study that is Mahang Gajah (*Macaranga gigantea*) and Kelempayan (*Neolamarkia cadamba*). Variable factors were as wood species (Mahang Gajah and Kelempayan), particle size (1.2 mm and 2.0 mm) and resin content (8 and 9%) on particleboard was determined. The properties of this particleboard are tested for their mechanical strength including modulus of rupture (MOR), modulus of elasticity (MOE) internal bonding (IB) and physical properties thickness swelling (TS) were determined based on Malaysian Standard (MS). Mechanical and physical properties strength of particleboard was increase toward smaller size of particle and increase in resin content. The result of this study shows Kelempayan and Mahang Gajah species were not suitable to use as raw material in particleboard because not meet the minimum requirements according to MS standard.