

**PROPERTIES OF PARTICLEBOARD PRODUCE FROM HYBRID
OF LUDAI AND KELEMPAYAN**

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ABSTRACT

PROPERTIES OF PARTICLEBOARD PRODUCE FROM HYBRID OF LUDAI AND KELEMPAYAN

This study is conducted to determine the mechanical and physical properties of hybrid particleboard made from Ludai and Kelempayan hence evaluates the effect of ratio and size of particle to board properties. Log of Ludai is obtained directly from UiTM Jengka Forest Reserved. Particleboard is made with target board density of 600 kg/m^3 and particle ratio divided by 4 that are 100LD:0KL, 70LD:30KL, 50LD:50KL, 0LD:100KL. Resin used is Melamine Urea Formaldehyde (MUF). Particleboard with 2.0 mm particle size has reach the minimum requirement for Malaysian Standard with 1617 MPa (LD100:KL0), 2301 MPa (LD70:KL30), 1710 MPa (LD 50:50) and 1667 MPa (LD0:KL100). For MOR value, only particleboard with ratio LD70:KL30 from 2.0 mm particle size were met the standard where the value was 18.78 MPa. For IB, all particleboard successfully achieves the standard require with the least value came from 1.0 mm particleboard from ratio of LD70:KL30 with 0.38MPa. Result in thickness swelling shows only particleboard from LD70:KL30 with particle size of 1.0 mm were met with the minimum standard required which the value was 11.19%. Admixture of Ludai in ratio and particle size causes decreasing performance to strength of particleboard. The highest value is produced from board with ratio of 70LD:30KL with particle size of 2.0 mm where has value of 2301 MPa for MOE, 18.2 MPa for MOR, 1.80 MPa for IB, 18.77% for TS and 92.03% of WA. Particleboard from hybrid of Ludai and Kelempayan has low potential as a raw material for particleboard manufacturing because of the low performance gave by Ludai species when it was mixed with Kelempayan.