

**PROPERTIES OF WOOD PLASTIC COMPOSITES (WPC) FROM
BATAI *SPP.* (*Paraserianthes falcataria*)**

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ABSTRACT

The properties of wood plastic composites (WPC) from Batai *spp.* (*Paraserianthes falcataria*) were ascertained. The effects of different particle sizes (250 μ m, 150 μ m and 75 μ m) and *Maleic anhydride-grafted* PP (MAPP) (3% and 0%) were determined. The amount of filler loading that was use in making the wood plastic composites (WPC) is 20%. The ASTM Standards was use to determine the composite properties. For the effect of particle sizes on mechanical properties, the higher value of flexural modulus of rupture (FMOR) and flexural modulus of elasticity (FMOE) is shown by the particle size of 75 μ m and the lowest by particle size of 250 μ m. For the value of tensile modulus of rupture (TMOR) and tensile modulus of elasticity (TMOE), there was no significant difference among the particle sizes of 250 μ m, 150 μ m and 75 μ m. For the impact test, particle size of 75 μ m was much stronger than the particle of 150 μ m and 250 μ m of the particle sizes. The effect of particle sizes on the physical properties especially on the water absorption (WA) is significant. Bigger particles tend to absorb more water into the WPC as compared to smaller particles. For thickness swelling (TS), there were no significant effects by varying the particle sizes. There is no significant difference in FMOR for WPC with MAPP or without MAPP. For the FMOE, WPC with MAPP showed better value than WPC without MAPP and for TMOR, TMOE and impact there is no significant difference. In the effect of MAPP on water absorption (WA) and thickness swelling (TS) it was shown to be significant. For WPC with MAPP had lower absorption of water thus giving lower TS as compared to WPC without MAPP.