FABRICATION AND MECHANICAL PROPERTIES OF *MUSA spp.* BLEND WITH POLYPROPYLENE $(C_3H_6)n$ AS POLYMER COMPOSITE

MOHD NAZREE BIN JAMALDIN

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ABSTRACT

FABRICATION AND MECHANICAL PROPERTIES OF *MUSA spp.* BLEND WITH POLYPROPYLENE $(C_3H_6)_n$ AS POLYMER COMPOSITE

Banana *(Musa spp.)* is a food very common in Asia and the trunk has a great mechanical quality. Banana trunk is very suitable raw material to be used in production of polymer composite or bioplastic made up of natural composite. The objective of the research is to create a bioplastic from the mix of banana trunk or (*Musa spp.)* pseudostem and Polypropylene $(C_3H_6)_n$. The plastic was prepared by mixing banana trunk fiber and polypropylene using rheomixer at 180°C and 100 rpm for 10 minutes. The mixture then was casted into molding plate and being press by hot press machine at 180°C for 6 minutes. After that the mixture undergo another press using cold press machine at 40°C for another 6 minutes. The plastic then tested using universal testing machine (Instron 5569) for its tensile strength, elongation at break and Young's modulus to obtain the mechanical properties of plastic. The maximum tensile strength, elongation at break and Young's modulus obtained was 5.14 MPa, 0.52% elongation and 1256.86 MPa with all using 50% of banana trunk fiber.

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LIST OF ABBREVIATIONS

PP	: Polypropylene
mm	: milimeter
°C	: Degree of Celsius
MPa	: Megapascal
rpm	: Revolution per minit
rev/min	: Revolution per minit