The effects of different length of pineapple leaf fibre (PALF) on tensile properties of random oriented composites

ABSTRACT

Pineapple, AnanasComosus is one of the most primary tropical plant in Malaysia and abundantly available waste materials produced every yea. Previously, there were many pineapples waste available. To date, the use of fibres that were extracted from the pineapple leaf is still limited due to lack of information, knowledge and facilities available to process the leaf into potential materials in various applications. This present study covered on the tensile properties of PALFs composites reinforced with vinyl ester resin in different length of fibre. The composites were fabricated by using hand lay-up technique with different fibre length of PALF. There were three different type of composites which are short (15 mm), mixed (15-30 mm) and long (30 mm) PALF. Based on the result, the highest tensile strength was achieved by the composites that was prepared using the long PALF which is 25.77 MPa while mixed PALF composites showed the highest in tensile modulus (2.848 GPa). In summary, the usage of PALFs in the fabrication of composites had great potential to reduce the non-renewable materials for real-life application.

Keyword: Pineapple leaf fibre (PALF); Tensile properties; Vinyl ester resin