ABSTRACT

Composite is a material that is formed from the mixing of two or more types of material, through a mixture that is not homogeneous and has different mechanical properties from each forming material. The industry that most aggressively develops natural materials as reinforcing polymer matrices is an automotive producer, this makes the composite materials of natural materials begin to be researched and developed. The use of natural fiber composites has several advantages such as the availability of abundant natural materials, can be obtained at low prices, are lightweight, corrosion resistant, fast growing, and also environmentally friendly. This research was conducted by comparing the polypropylene matrix composite tensile strength journals with various natural fibers that can be used as composite reinforcement materials such as jute, kenaf and hemp. The process of forming composites by cutting natural fibers in accordance with the specified size, then proceed to the composite printing process by hand lay-up method. After the printing process of composite sheets is cut according to size, tensile testing is carried out with ASTM D683 standard and ISO 527 standard, analyzing microstructure using SEM images. Results obtained from comparable journals; jute fiber with tensile properties of 39.70 MPa and modulus of young 0.8 GPa, kenaf fiber with tensile properties of 32.80 MPa and young modulus of 1.5 GPa, and hemp fiber with tensile properties of 26.68 MPa and young modulus of 1.8 GPa.

***Keyword**: Jute, kenaf, hemp, polypropylene, tensile strength*