



MECHANICAL CHARACTERIZATION OF NATURAL INTRALAMINAR HYBRID COMPOSITES REINFORCED WITH JUTE+CURAUÁ

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Abstract: Environmental awareness has been in the focal point of industry and science in recent years. The need for alternatives to synthetic composite materials, which come with many problems such as high energy demand for production and recycling, without sacrificing mechanical performance is in focus. In that regard there is a visible increase in studies with natural fibers and their products. These materials have proven to be interesting as reinforcement materials for composites as they can combine light weight, stiffness and resistance but they tend to fall short of synthetic fibers like fiber glass. The most common method used to obtain the natural hybrid composite is to use interlaminar layers of both fibers, although there is another method that can be used, this being the intralaminar. This work will focus on hybrid composites made from jute and curauá with a different layering method. The fibers will be interweaved, using the jute matt as a base for the curauá, hence producing a intralaminar hybrid matt which will be laminated with a polyester resin. The objective of this work is to test the subsequent fully biodegradable natural interlaminar hybrid composite to investigate its mechanical properties. It was found that it presented good tensile strength and flexural strength when compared with simple jute fibers composites.

Keywords: Chemical Treatment, Intralaminar, Hybrid Composite, Jute, Curauá, Natural Composites.