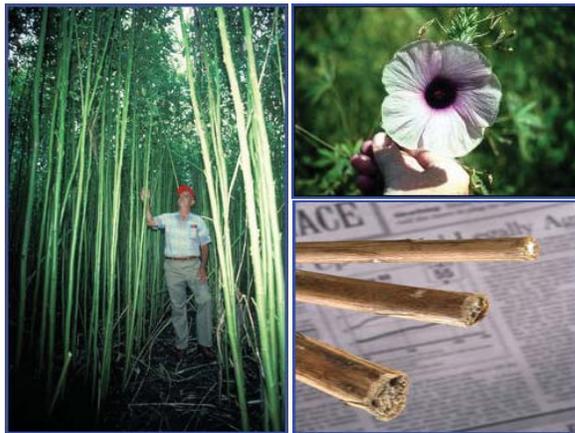


ABSTRACT

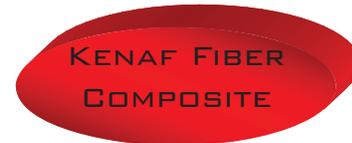
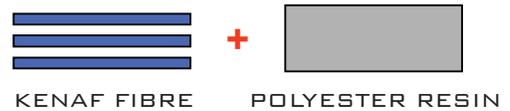
The purpose of this project was to study and test a new composite material for use in manufacturing product. The composite was composed of kenaf fibers as reinforcement for polyester resin thermoset polymer. Long bast kenaf fibers were used and treated using different concentration and immersed time of NaOH. The effects obtained after the modification have been analyzed by scanning electron microscopy (SEM). The fibers were combined with polyester resin and using vacuum infusion method to form natural fiber composites. Tensile, flexural and Izod impact properties were determined according to ASTM standards. Mechanical properties were presented increase with the increasing of NaOH concentration. The composites with concentration 6% NaOH and immersed 12 hours performed the highest value of tensile properties. However, the flexural strength shows the highest value at 9% NaOH. Kenaf fibers have a potential as a new alternative in wood-based product industry.

KENAF

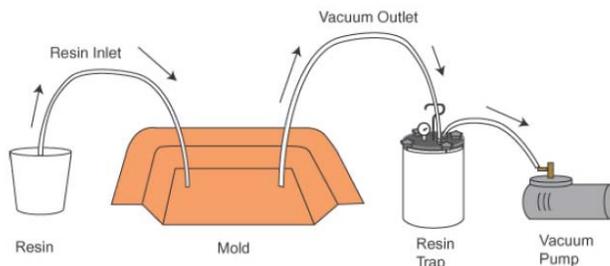
Kenaf (*Hibiscus cannabinus* L.) is a fiber plant native to east-central Africa where it has been grown for several thousand years for food and fiber. It is a common wild plant of tropical and subtropical Africa and Asia. Kenaf grows quickly and will achieve 5 to 6 m in height and 2.5 to 3.5 cm in diameter within 5 to 6 months. Kenaf has a unique combination of long bast and short core fibers which makes it suitable for a range of paper and cardboard products



COMPOSITE



RESIN INFUSION



ADVANTAGES OF RESIN INFUSION

- ~ Better fiber-to-resin ratio
- ~ Less wasted resin
- ~ Very consistent resin usage
- ~ Unlimited set-up time
- ~ Cleaner

CONCLUSION

- ~ High mechanical performance
- ~ Low cost and environment friendly
- ~ Biodegradable material
- ~ Have a potential as a new alternative in wood-based product industry

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