



PROSOPIS JULIFLORA FIBRE PROCESSING TO NON-WOVEN BAGS

¹ S. Sivasankari M.sc., ² G. Kokilavani Asst.Prof

Dr V. Mahalakshmi

Department of Costume Design and fashion,

KSR College of Arts and Science for Women, Tiruchengode, Namakkal.

ABSTRACT

Prosopis Juliflora fiber is a local to South America was intentioned presented for its versatility to leave condition, quick, development, and source of fuelwood, animals feed, and bee scrounge. This fiber has more development in India so which is chosen to make sling sacks utilizing this fiber. It too gives shade, stabilizes soil through broad root framework consequently controls soil disintegration. It has the benefits of drylands economy. The result of focusing on the item to create the Prosopis fiber to non woven by chemical bonding. It interfaces the item of clothing fashion and development additions. It is a therapeutic fiber and particularly Prosopis plants are wealthy sources of phytochemicals, among them alkaloid, phenolic compounds, especially flavonoids and glycosides, steroids, tannis and triterpenoids, progressively recognized as having positive wellbeing impacts. The pack is come about in the base of texture, fashion, surfaces, shapes, heau and so on. Most vitally this product is made up of non woven staple fiber. It is fortified together by chemical treatment. Which will be more toughness, financial neighborly and in reasonable cost and quality. Which will too be long enduring up to 5 a long time. These are re-usable and recyclable item. The pack come about in the base of Prosopis Juliflora fiber.

KEY WORDS: Prosopis Juliflora fiber, non woven, staple fiber, lasting up to 5 years, re-usable

OBJECTIVES

- To innovate Prosopis Juliflora fabric by use of non woven.
- Processing applied to non woven chemical bonding.
- To prepare re-usable non woven sling bag.
- These are eco-friendly, recyclable and re-usable

INTRODUCTION

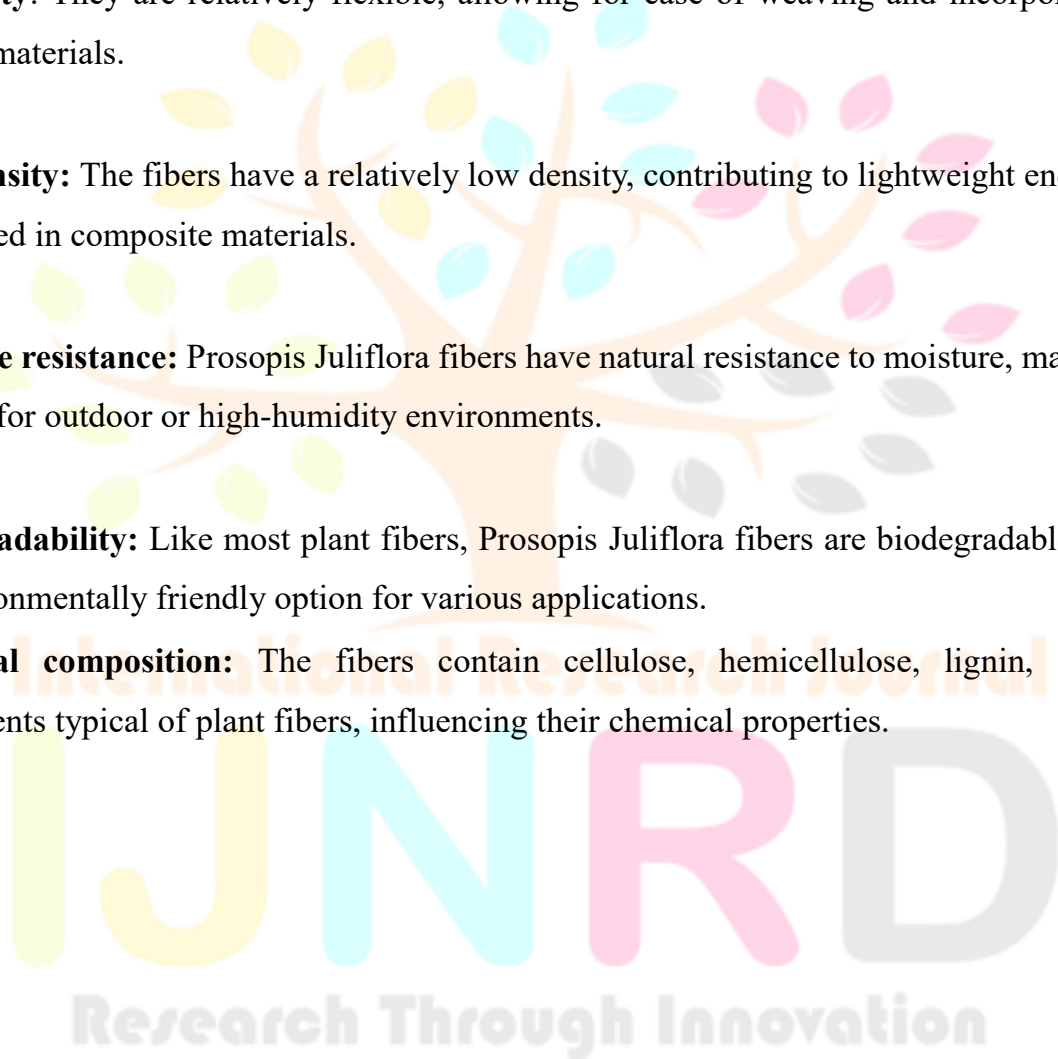
Prosopis Juliflora, commonly known as mesquite, is a perennial shrub or small tree native to Central and South America but has been introduced to various regions worldwide. It is known for its adaptability to arid and semi-arid environments, making it a valuable species for reforestation and erosion control efforts. However, it can also become invasive in certain areas, outcompeting native vegetation. Mesquite produces pods containing seeds that are nutritious and used for livestock feed and human consumption in some cultures. Additionally, its wood is valued for its durability and is used in various applications, including furniture-making and charcoal production. The chemicals used for Prosopis Juliflora fiber into bags include alkaline solutions like sodium hydroxide (NaOH) or potassium hydroxide (KOH) for delignification and bleaching as well as acids like acetic acid or citric acid for neutralization and pH adjustment during processing. Which are long lasted for 5 years.

Non-woven fabrics are engineered textiles made from fibers bonded together through chemical, or thermal processes, rather than being woven together like traditional fabrics. They are versatile, cost-effective, and widely used in various applications, including medical, automotive, construction, and hygiene products. Non-woven offer benefits such as breathability, durability, absorbency, and resistance to moisture and chemicals. Their production methods allow for customization of properties like thickness, density, and strength, making them suitable for a diverse range of uses.

The sling bag is obtained from the stems of the Prosopis Juliflora tree. This fiber is extracted from the various processing methods including stripping, scrapping, or decorticating the bark and stems of the tree. It is valued for its strength, durability, and versatility, making it suitable for wide range of applications. Mesquite fibers resilience makes it suitable for use in construction materials, crafts, erosion control products, and potentially in eco-friendly textiles and composites.

PROPERTIES

- **Length:** The fibers are typically long, which enhances their strength and suitability for textile applications.
- **Strength:** Prosopis Juliflora fibers exhibit good tensile strength, making them durable and resistant to breaking or tearing.
- **Flexibility:** They are relatively flexible, allowing for ease of weaving and incorporation into various materials.
- **Low density:** The fibers have a relatively low density, contributing to lightweight end products when used in composite materials.
- **Moisture resistance:** Prosopis Juliflora fibers have natural resistance to moisture, making them suitable for outdoor or high-humidity environments.
- **Biodegradability:** Like most plant fibers, Prosopis Juliflora fibers are biodegradable, offering an environmentally friendly option for various applications.
- **Chemical composition:** The fibers contain cellulose, hemicellulose, lignin, and other components typical of plant fibers, influencing their chemical properties.





Prosopis Juliflora

SECTION NIPPETS

CHEMICALS USED

The chemicals utilized for Prosopis Juliflora fiber into sacks incorporate antacid arrangements like sodium hydroxide (NaOH) or potassium hydroxide (KOH) for delignification and dying, as well as acids like acidic corrosive or citric corrosive for neutralization and pH alteration amid preparing. Furthermore, different surfactants or wetting operators may be utilized to corrosive in the extraction and decontamination of the fiber.

TENSILE TEST

The pliable test is conducted on a Tinius Olsen 10 KN Widespread testing machine (UTM) with a gage length of 75 mm and the crosshead speed of the machine is set at 5 mm/min. The example estimate for the ductile test is 115 mm × 20 mm x 3 mm concurring to ASTM D638. The speed depends on example shape and the extend from 0.05 to 20 inches per diminutive. The target time from begin of test to break from 30 s to 5 min.

FLEXURAL TEST

Flexural test was conducted by the same pliable testing machine.

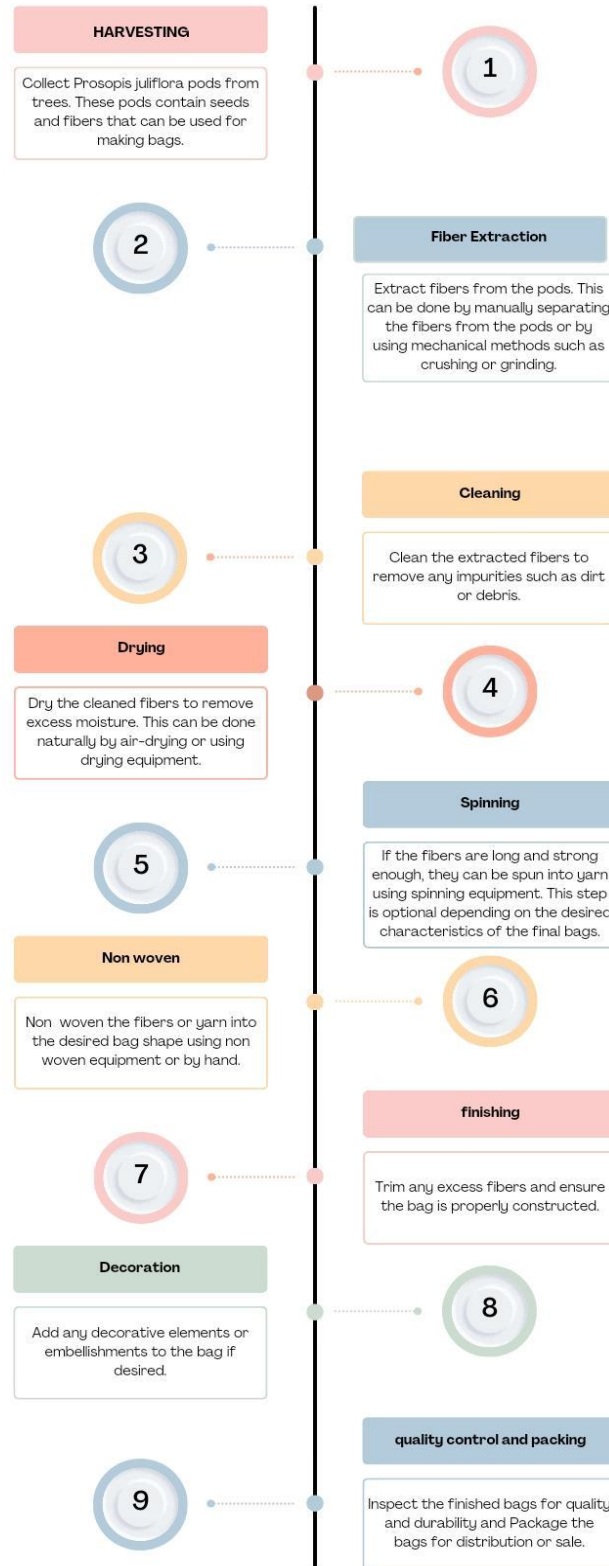
TENSILE ATTRIBUTES

Tensile properties of the bio composites were watched. The pliable properties of epoxy/polymer composite increment with common fiber stacking in all cases. The NFC composites appears great improvement of ductile quality. The pliable quality and ductile modulus are slowly expanding up to the most extreme stack carrying capacity of the material.



PROSOPIS JULIFLORA

MATERIALS AND METHODS



CONCLUSIONS

The Prosopis Juliflora non woven sling bags are epoxy composites on distinctive weight rates by hand layup strategy. Fundamental of the bio composites such as malleable, flexural, compression, affect and hardness properties were explored. The ductile quality and modulus esteem of the soluble base treated example. Which are too brought about by financial inviting, recyclable and re-usable item. This item may alludes the most recent form of adornments trends .

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