



Jute Fiber Extraction and its Economic Importance

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Introduction:

Next to cotton, jute is a significant natural fibre crop in India. Since their functions are so similar, jute and mesta crop are together referred to as raw jute in trade and industry. Jute fibre in its raw form is significant to the national economy. Jute in its raw form was initially thought of as a raw material source exclusive to the packaging industry. But it has since gained recognition as a flexible raw resource for a range of uses, including those in the textile, paper, building, and automotive sectors, as a soil saver, and as a decorative and furnishing material, among others.

Raw jute is regarded as an environmentally safe crop that aids in maintaining the ecosystem and ecological balance because it is biodegradable and a yearly renewable resource. As a natural fibre, jute offers several unquestionable benefits. The properties of natural fibre that cannot be equaled by synthetic fibre are its smooth lustre, high tensile strength, low exhaustibility, significant heat resistance, and long staple length. Jute's easy accessibility, limitless supply, and comparably lower cost are other draws.

Additionally, it is simple to combine with different synthetic and natural fibres. East and north-eastern India are the regions with the highest concentration of jute growing. While synthetic materials are increasingly replacing jute in various applications, some still benefit from jute's biodegradable properties when synthetics would be inappropriate. Young trees can be put immediately in containers for planting without disturbing the roots.

Jute, a crop grown for its bast fibre, can be harvested at any stage following a set amount of vegetative development time, often between 100 and 150 days. The greatest quality fibre comes from harvesting jute at the pre-bud or bud stage, but the yields are low. Older crops produce more fibre overall, but the fibre becomes coarser and the stem does not retract properly. Thus, early pod formation stage has been shown to be the best for harvesting as a compromise between quality and quantity.

Sharp sickles are used to harvest the plants by cutting them at or near their ground level. The vegetation in flooded areas is uprooted.

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For two to three days, the harvested plants are left in the field so the leaves can fall off. The branched tops are then lopped off and left to rot in the field after the plants are knotted into bundles 20 to 25 cm in diameter.

The key properties of jute fibres:

- ✓ Jute fibres are relatively cheap and therefore affordable by many people.
- ✓ Jute fibre is also known to be quite soft.
- ✓ Another desirable property of jute is that it is quite lustrous.
- ✓ The uniformity of the fibres obtained from the jute plant also makes them highly desirable commercially.
- ✓ Jute plants yield fibres of relatively high length.
- ✓ Jute is also known as the golden fibre due to its highly versatile nature.

fibres and separates them from the wooden stalk. The bundles are submerged in water that ranges in depth from 60 to 100 cm. When the barks easily separate from the stick or wood and the fibres are ready for extraction, the retting process is finished in 8 to 30 days. Adoption of ribbon retting technology in the nation's expanding jute trade is a recent development.

Stripping (Fibre Extraction): Following retting, the stalk's fibres are removed by the process of stripping. Any of the following techniques can be used to extract the fibres from the stalk:

- (i) Single plants are taken and their fibers are taken off.
- (ii) Taken off a handful of stalks, breaking it in a to and fro motion in water.
- (iii) Washing the stalks first by standing in waist deep water and then stripping afterwards.

Bundles of stalks are placed in pond ditches or slow-moving streams when there is sufficient of water and left for 5 to 15 days submerged. The root end of the stem bunch is lightly tapped with a mallet while being held in one hand. The remaining fibres are first loosened, and then they are retrieved and cleaned.

Washing and Drying: Clean water is used to wash the extracted fibres. By soaking the fibres in tamarind water for 15 to 20 minutes and then washing them once more in clean

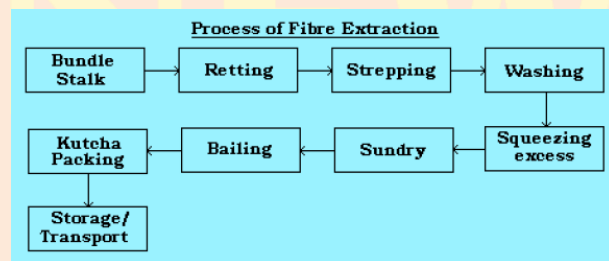


Fig. 1: Flow chart of traditional Jute extraction method

Retting: The tied bundles of jute stalk are carried to a tank for retting, which loosens the

water, the dark colour of the fibres can be erased. The fibres are hung on bamboo railings to dry in the sun for two to three days after squeezing out the excess water.

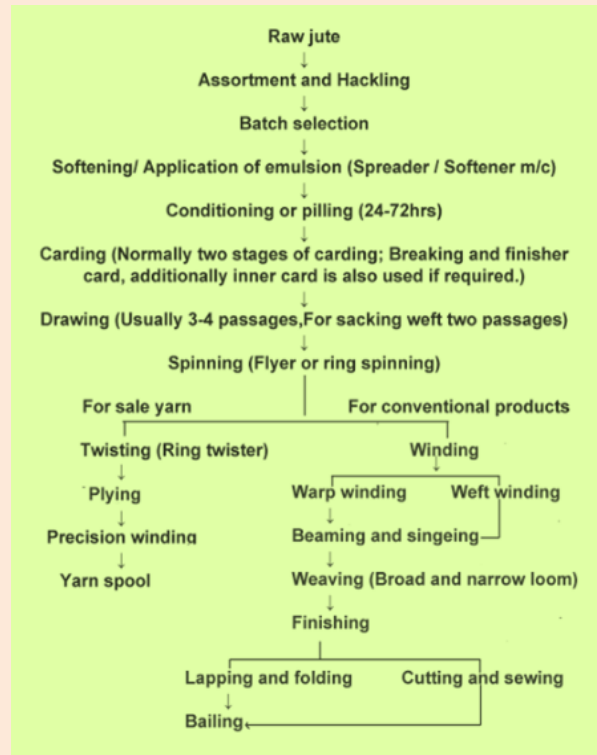


Fig. 2: Flow chart for jute fibre extraction on large scale

Washing and Drying: Clean water is used to wash the extracted fibres. By soaking the fibres in tamarind water for 15 to 20 minutes and then washing them once more in clean water, the dark colour of the fibres can be erased. The fibres are hung on bamboo railings to dry in the sun for two to three days after squeezing out the excess water.

Bailing and Packing: The grading of jute fibre includes tops, middles, B, C, and X-bottoms. 250 pounds are being stuffed into

Kutchha bales for use in domestic trade. They are delivered directly to jute mills or to the jute market. Jute is mostly used to manufacture sacks and coarse cloth, as well as cloth for wrapping bales of raw cotton. Additionally, the fibres are woven into hessian fabric, carpet backing, area rugs, chair covers, curtains, and carpets.

Economic Importance:

Jute Fabrics:

Jute is a natural, long and soft vegetable fiber with golden silky shine, also termed as “**The Golden Fiber**”. It can be spun into coarse and strong threads. This fabric is also known as hessian and burlap. The very fine threads of jute can be separated out and made into an imitation silk. India is one of the largest producers of jute in the world. The prime goods woven of jute in India were coarse packaging materials, farmer market bags, grocery bags, shopping bags and floor mats, ropes and twines. Being among the strong and durable fabric, jute fabric is ideally being used as bags or sacks for packing since aging. The jute fabric is much sought item for fashionable clothes, home furnishing and fashion accessories. The most important use of the jute fabric is in the manufacturing of carpets, linoleum, cordage and twines. It is sometimes used as webbing to cover inner springs of the auto seats. Sometimes used as

fashion accessory used for fashion garments, tapestries, soft luggage, etc.

Today most of the manufacturers and exporters of jute made furniture provide a



Fig. 3: Jute fabrics made from jute fiber

Jute Furniture Besides piece of furniture made from other popular wood types, Jute furniture is also favored by consumers all around the world. The furniture made from Jute doesn't only look good, but can also enhance the area of your living room or drawing room. Jute made furniture has a number of striking features. This makes it a perfect choice for making long-lasting and hard-wearing furniture. Jute furniture is natural, captivating and highly stylish and is acquirable all over, in a number of various designs as well as styles.

complete range of Jute furniture, which covers:

1. Jute Chairs, Stools & Tables
2. Jute Lounge Chairs
3. Jute Beds
4. Jute Sofa Sets
5. Jute chair & table
6. Jute Office Furniture
7. Jute Hotel Furniture
8. Jute Room Divider
9. Jute Cafeteria Chairs & Tables
10. Jute Mattress
11. Portable Jute Bed
12. Jute Hammocks & Hanging Chairs
13. Jute Shoe Rack
14. Jute Multipurpose Racks and so on...



Fig. 4: Jute furniture's made from jute fiber

On top of all that, such furniture can also stay longer without any heavy maintenance or cleaning. Even without any added chemical substance, Jute has the quality to be very immune against water damage and, unlike other materials; there is no point forming into any sort of rust. It is very easy to clean and will rarely need any additional care in order to keep it safe. While this makes Jute furniture perfect for outdoor surroundings such as your backyard or terrace, it also gives a beautiful touch to any area you are looking to beautify within your home or cottage. Furniture made from jute is less expensive, and is pleasing to the eye and durable and can incorporate new designs. Normally middle class and low-income groups of people can easily use Jute made furniture. Therefore, the demand for such furniture is increasing rapidly in the global market.

Jute cloth: Jute cloth made by 100% jute fiber, laminated jute cloth, jute hessian fabric, rough jute products, hessian cloth, sackcloth, for pack. Anji Qingyun jute cloth made by 100% jute fiber, 100% jute natural products, laminated jute cloth, and laminated jute fabric. The jute fabric is getting popular in nowadays. The fabric also could be dyed, colored, printed, embroidered, bleached, printed, soft, PE coated, etc...



Fig. 5: Jute cloths made from jute fiber

Characteristic: Environmental, economical, slub, rough, eco-friendly, Moisture-Absorbent.

Other Uses: Diversified byproducts from jute can be used in Jute shoes, cosmetics, medicine, paints, and other products.



Fig. 5: Jute shoes and cosmetics made from jute fiber

Conclusion:

The production of jute, a significant natural fibre crop, is significant to the economy of the nation. Initially, only packaging businesses were thought to use raw jute as a source of raw materials. However, it has since become a flexible raw material with a wide range of uses, including in the textile, paper, building, and automotive sectors, as a soil saver, and as a decorative and furnishing material. Raw jute is an environmentally beneficial material that supports the preservation of the environment and ecological balance because it is biodegradable and an

annual renewable resource. It significantly influences the economics of the nation by creating jobs, bringing in foreign currency, resolving numerous socioeconomic issues, etc. Jute was once thought of as a "Golden Fiber," but later it had to go through various difficult circumstances. The emergence of synthetic fibre by the late 1960s/early 1970s created the main obstacle. The value of jute has once again increased as a result of the diversification of products made from jute fibre and growing environmental awareness.

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