## Waste to wealth : craft development using banana fibre



Waste to Wealth : Craft Development Using Banana Fibre A PEOPLE'S MANUAL WASTE TO WEALTH : CRAFT DEVELOPMENT USING BANANA FIBRE CAPRE FOUNDATION | Page 1 www. caprefoundation. org A People's Manual Waste to Wealth : Craft Development Using Banana Fibre About CAPRE Foundation CAPRE Foundation is a non-profit, voluntary organization registered in 1999 under Section 21 of the Societies Registrations Act, 1860. It was founded by grass roots people including tribals with a social conscience to work for socio-economic, cultural and educational upliftment of marginalized/underprivileged people. The foundation has been actively involved in social concerns such as sustainable livelihood, health and non formal education and is working on development programmes in rural areas of Uttar Pradesh, Bihar, Iharkhand and Delhi. Mission Creating Awareness Programs to promote development as a liberating force aimed at inclusivity, social justice, economic growth and selfreliance for the upliftment of rural marginalized and underprivileged people. Vision To create global awareness about the exclusion that underprivileged people suffer in India together with becoming a leading organization in transparency, good governance and best practice , Editor © CAPRE Foundation, Allahabad Address Registered Office : 24 Strachey Road Civil Lines Dist. — Allahabad — 211001 (UP) Field Office : Professor's Colony, Near Manavi, Shiv Pahar, Dumka — 814101, Jharkhand E-mail : caprefoundation@gmail. com Website : www. caprefoundation. org Printed By : Page 2 A People's Manual Waste to Wealth : Craft Development Using Banana Fibre Contents The Tree The Fibre Fibre Extraction Characteristics of Banana fibre Applications of Banana fibre Cost Benefit Analysis CAPRE Foundation 's efforts promote banana fibre craft A few products being developed by CAPRE Foundation 4 4 5 5 6 7 8 9 https://assignbuster.com/waste-to-wealth-craft-development-using-bananafibre/

Page 3 A People's Manual Waste to Wealth : Craft Development Using Banana Fibre The tree Banana is the common name for herbaceous plants of the genus Musa and for the fruit they produce. Bananas come in a variety of sizes and colors when ripe, including yellow, purple, and red. Almost all modern edible parthenocarpic bananas come from the two wild species Musa acuminata and Musa balbisiana. The scientific names of bananas are Musa acuminata, Musa balbisiana or hybrids Musa acuminata × balbisiana, depending on their genomic constitution. The old scientific names Musa sapientum and Musa paradisiaca are no longer used. The major banana producing states of India are Tamilnadu, Maharashtra, Karnataka, Gujarat, Andhra Pradesh, Assam and Madhya Pradesh. The Fibre Banana plant not only gives the delicious fruit but it also provides textile fiber, the banana fiber. It grows easily as it sets out young shoots and is most commonly found in hot tropical climates. All varieties of banana plants have fibers in abundance. These fibers are obtained after the fruit is harvested and fall in the group of bast fibers. This plant has long been a good source for high quality textiles in many parts of the world including India. After the fruit and the leaves are harvested, the bark of the tree is used which otherwise would have gone waste. The fibre is extracted from the bark of the tree which is the mother of so many beautiful handcrafted banana fibre products. Page 4 A People's Manual Waste to Wealth : Craft Development Using Banana Fibre The banana fibre is composed of cellulose — 62%, lignin - 29%, hemicellulose 3%, rectin - 2%, miscellaneous - 4%. By-products of the fibre are : fabrics, bags, various types of mats, interior decoration items, window

blinds, cushion covers, bolster covers, table lamps and folders, to name a

no consumption of electricity while making the products as it is made on the handlooms. Also, no chemicals are used in the manufacture. It is an excellent substitute for plastic and paper. Fibre Extraction Banana Fiber is extracted from Banana tree bark. The trunk is peeled. Browngreen skin is thrown away retaining the cleaner or white portion which will be processed into knotted fibers. The fibers are extracted through hand extraction machine composed of either serrated or non serrated knives. The peel is clamped between the wood plank and knife and hand-pulled through, removing the resinous material. The extracted fibers are sun-dried which whitens the fiber. Once dried, the fibers are ready for knotting. A bunch of fibers are mounted or clamped on a stick to facilitate segregation. Each fiber is separated according to fiber sizes and grouped accordingly. To knot the fiber, each fiber is separated and knotted to the end of another fiber manually. The separation and knotting is repeated until bunches of unknotted fibers are

finished to form a long continuous strand. This fiber can now be used for making various products. Characteristics of Banana fibre Banana fiber is a natural bast fiber. It has its own physical and chemical characteristics and many other properties that make it a fine quality fiber. ï,· Appearance of banana fiber is similar to that of bamboo fiber and ramie fiber, but its fineness and spinnability is better than the two. ï,· The chemical composition of banana fiber is cellulose, hemicellulose, and lignin. Page 5 A People's Manual Waste to Wealth : Craft Development Using Banana Fibre ï,· It is highly strong fiber. ï,· It has smaller elongation. ï,· It has somewhat shiny appearance depending upon the extraction & spinning process. ï,· It is light weight. ï,· It has strong moisture absorption quality. It absorbs as well as releases moisture very fast. ï,· It is bio-degradable and has no negative effect https://assignbuster.com/waste-to-wealth-craft-development-using-banana-

fibre/

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on environment and thus can be categorized as eco-friendly fiber. i, Its average fineness is 2400Nm. i, It can be spun through almost all the methods of spinning including ring spinning, open-end spinning, bast fiber spinning, and semi-worsted spinning among others. Applications of Banana fibre In the recent past, banana fiber had a very limited application and was primarily used for making items like ropes, mats, and some other composite materials. With the increasing environmental awareness and growing importance of eco-friendly fabrics, banana fiber has also been recognized for all its good qualities and now its application is increasing in other fields too such as apparel garments and home furnishings. Banana fiber is also used to make fine cushion covers, Necties, bags, table cloths, curtains etc. Rugs made from banana silk varn fibers are also very popular world over. Different applications of the fibre are  $-\ddot{i}$ , Banana fibre has great potentialities for paper making special demand of Hand made paper. i, Its fibre has used like rope, mats and other composite materials. *ï*, Banana fibre has recognined for apparels and home furnishings. Page 6 A People's Manual Waste to Wealth : Craft Development Using Banana Fibre ï, Polypropylene reinforced with banana fibre is used by automobile companies for making underfloor protection panels in luxurious cars like Mercedes. ï, Banana fibre mostly used in making handicrafts and home decorative. i, Composite material of banana fibre used in building boards and fire resistance boards. i. Banana fibre is making products like paper bags, filter paper, greeting cards, decorative papers, pen stands, lamp stand and many more. i, Banana fibre in used currency notes in Germany and trial run in India also. i, During the research, it was found that paper made out of this fiber has shelf life of over

100 years as it is the strongest of the long fibres ever found amidst natural https://assignbuster.com/waste-to-wealth-craft-development-using-bananafibre/ fibres. It can be folded for as many as 3, 000 times. It can used currency and value-able documents like manuscript document preserver (Pundulipies). Cost benefit analysis (These costs are average estimates) Input cost: Nil Fixed Cost: Fibre Extraction Machine : Rs. 40, 000 Variable cost: Plant cutting and useable raw material cost (Rs/acre): 3000 Labour cost (Rs/ month): 5000 Electricity charges (Rs/month): 1000 Other charges (Rs/months): 1000 Total cost (Rs/month): 10000 Output : Income from banana fibre (Rs/ Acre): 8000 Income from banana fibre (Rs/month): 16000 Income from Manure (Rs/Acre waste): 2000 Page 7 A People's Manual Waste to Wealth : Craft Development Using Banana Fibre Total income: 18000 Net Income Rs : Output- Input : 8000 CAPRE Foundation 's efforts promote banana fibre craft The latest innovative idea being pushed by CAPRE Foundation is teaching women how to produce banana fiber and craft items from this fiber in Shankargarh and Kaurihar II block in Allahabad district with collaboration from Eco Green Unit of Coimbatore. Considerable work has been done in the field of direct use and product development from banana fruits. However, not much attention has been focused on effective utilization of the huge biomass generated in the form of pseudostem, leaves, suckers etc. In India, presently this biomass is dumped on roadside or burnt or left in situ causing detrimental impact on environment. Though, the technologies for extraction of fibres and paper making from pseudostem are available, not much has been done in northern India in this regard whilst Southern India is the leader in banana fibre craft. Capre Foundation has taken the lead and in collaboration with ECO GREEN UNIT from Coimbatore. However, there exists a vast potential of extracting fibres from pseudostem and using the fibre in making craft such as coasters, mats rugs wall hangings which CAPRE is already implementing with an https://assignbuster.com/waste-to-wealth-craft-development-using-banana-

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effective marketing strategy in place with 100 per cent buy back by Eco Green Unit in Coimbatore. Page 8 A People's Manual Waste to Wealth : Craft Development Using Banana Fibre A few products being developed by CAPRE Foundation Page 9 A People's Manual