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MAKING OF BANDAGE WITH TI PLANT LEAF FIBER

[1]Mr. Keertan C, [2]Ms. Harsini S, [3]Ms. Shakthi R
[1,2] *Textile Technology*
[3,] *Biomedical Engineering*
[1,2,3,] *Bannari Amman Institute Of Technology, Erode.*
Affiliated to Anna University

The ancient practice of making traditional Bandage with fiber from Ti plant leaves is deeply rooted in cultural heritage and sustainable craftsmanship. Harvesting leaves from the resilient Ti plant, which is known for its strong and flexible fibers, is the meticulous procedure. In keeping with the principles of sustainability, this eco-friendly strategy ensures minimal environmental impact. The most vital phase in this mind boggling workmanship is the cautious choice of mature Ti plant leaves, which are then handily cut and ready for the extraction of filaments. The skill and patience that have been passed down through the generations can be seen in the meticulousness with which these fibers were extracted. After carefully extracting the fibers, the artisans begin the intricate weaving process, demonstrating their skill at transforming raw materials into a product that is both useful and attractive. The Bandage's sturdy yet flexible structure is created through the weaving technique, a delicate hand-to-hand dance. This cycle requires accuracy as well as a personal comprehension of the attributes of Ti plant strands to guarantee the eventual outcome's solidness and life span.The weaving's designs and patterns frequently have symbolic meaning, highlighting the community's rich cultural tapestry. Each Bandage recounts an extraordinary story, portraying the customs, convictions, and history of the specialists and their networks. In conclusion, the process of making Bandage with fiber from Ti plant leaves is a harmonious combination of nature, culture, and skill. Every stage of making these traditional artifacts, from the sustainable harvesting of Ti plant leaves to the intricate weaving process, is evidence of the craftsman's skill, dedication, and concern for the environment. The Bandage, with its underlying foundations profoundly implanted in custom, serves as a practical thing as well as a social relic, saving the substance of a revered art for a long time into the future.

1.1 Advantages of TI plant leaf fiber bandages :

Using Ti plant leaf fiber to make Bandage has several benefits:

1. Sustainability: Because it relies on a plentiful and regenerative natural resource, the utilization of Ti plant leaf fibers encourages sustainability. This environmentally friendly strategy is in line with current efforts to lessen production processes' impact on the environment.

2. Biodegradability: Because the fibers of the Ti plant's leaf are biodegradable, less waste ends up in the environment. Dissimilar to engineered materials that might require a long time to disintegrate, Bandage produced using regular strands guarantees insignificant natural damage

toward the finish of its life cycle.

3. Preserving Cultural Assets: The custom of making Bandage with Ti plant leaf fiber is frequently profoundly interlaced with social practices and legacy. Communities ensure the long-term survival of one-of-a-kind customs by continuing this trade, preserving cultural knowledge and passing it on to future generations.

4. Employment and skill development: Local communities provide skilled artisans with employment opportunities as a result of the craftsmanship that goes into the production of Bandage. In addition to supporting traditional skills, this helps these communities' economic well-being.

5. Artistic Expression and Personalization: During the weaving process, artisans can create intricate designs and patterns, allowing for a high degree of customization. This artistic expression not only enhances Bandage's aesthetic appeal but also gives each piece a unique touch.

6. Lightweight and long-lasting: Ti plant strands are known for their solidarity and adaptability, bringing about Bandage that are both tough and lightweight. This ensures the product's durability and resistance to wear and tear while also making the finished product comfortable to use.

7. Comfort and Breathability: Ti plant fibers frequently provide excellent breathability and comfort due to their inherent properties. Because of this, Bandage is suitable for a variety of applications, particularly in warm climates, where air circulation prevents heat-related discomfort.

8. Versatility: Bandage made of Ti plant fiber can be used for many things. Their adaptability makes them more appealing and useful in a variety of settings, whether they are used for traditional clothing, home decor, or ceremonial items. In outline, creating Bandage with Ti plant leaf fiber joins natural cognizance, social safeguarding, and useful utility, settling on it a practical and significant decision.

OBJECTIVE:

The improvement of a swathe produced using ti plant (Cordyline fruticosa) leaf strands holds guarantee as a manageable and possibly useful injury dressing. This venture means to investigate the attainability of this idea by framing a few key goals:

1. Characterization of Ti Plant Leaf Fibers:

Fiber Extraction: The first objective is to establish an efficient and standardized method for extracting fibers from ti plant leaves. This involves determining the optimal leaf age, harvesting technique, and processing methods (e.g., scraping, retting) to yield high-quality, strong fibers.

Fiber Properties: Analyze the physical and chemical properties of the extracted fibers. This includes measuring fiber diameter, length, tensile strength, and flexibility. Additionally, assess the presence of bioactive compounds within the fibers that might be beneficial for wound healing.

2. Bandage Development:

Bandage Design: Design a functional bandage prototype using the extracted ti plant fibers. This involves considering factors like: Weaving or Non-woven Construction: Explore different methods of constructing the bandage, such as weaving the fibers into a fabric or creating a non-woven structure using a bonding agent.

Bandage Characteristics: Determine the desired properties of the bandage, such as its porosity (allowing air and fluid exchange), absorbency (drawing in wound exudate), and biocompatibility (compatibility with human tissue). Sterilization Techniques: Identify appropriate sterilization methods to ensure the bandage is free of microorganisms before use.

3. Evaluation of Bandage Performance:

In Vitro Testing: Conduct in vitro (laboratory) testing to assess the performance of the ti plant fiber bandage. This can include: Antimicrobial Activity: Evaluate the potential of the bandage to inhibit the growth of bacteria commonly associated with wounds.

Cell Adhesion and Proliferation: Assess how well different cell types (such as skin cells) adhere to and grow on the bandage surface, which is crucial for wound healing.

Fluid Absorption: Measure the bandage's capacity to absorb wound exudate, which helps maintain a moist wound environment for optimal healing.

In Vivo Testing (Optional): Depending on the initial in vitro results, consider conducting in vivo (animal) studies to further evaluate the bandage's effectiveness in promoting wound healing. This would involve comparing wound closure rates and tissue regeneration in animals treated with the ti plant fiber bandage versus a control group.

4. Sustainability and Cost Analysis: Environmental Impact: Evaluate the environmental impact of using ti plants as a source of bandage material. This includes assessing factors like water usage, land requirements, and potential for renewable cultivation.

Cost-Effectiveness: Compare the projected costs of producing ti plant fiber bandages with conventional wound dressings. This analysis should consider factors like fiber extraction methods, processing techniques, and potential for large-scale production. By accomplishing these goals, this venture can contribute important data on the capability of ti plant leaf strands as a practical and successful injury dressing material. The examination can make ready for additional turn of events and streamlining of this normal wrap arrangement, possibly offering an important option to the medical services field, especially in districts with restricted admittance to customary clinical supplies.

METHODOLOGY:

The ti plant (Cordyline fruticosa), with its dynamic leaves, offers something other than excellence. In conventional practices, areas of strength for its were utilized to make different things, including wraps. Here is a

brief look into the method involved with changing ti leaves into a characteristic injury dressing:

Preparation:

Leaf Selection: Choose mature ti leaves that are free from blemishes or tears. Younger leaves, while more pliable, might be less durable.

Fiber Extraction: Using a sharp knife, carefully remove the fleshy pulp from the central vein of the leaf. This vein is where the strong fibers lie.

Fiber Separation: Scrape the exposed vein against the flat rock or board to loosen and separate the individual fibers. You can also soak the vein in water for a short time to soften it before scraping.

Fiber Cleaning: Rinse the separated fibers thoroughly in clean water to remove any remaining plant material or debris.

Spinning Process (Rotor spinning): While ti plant fibers can be used directly for bandaging, creating yarn adds strength and structure to the bandage. Here's a traditional method:

Fiber Bunch Preparation: Take a small bunch of cleaned fibers and twist them gently to form a loose strand.

Spindle Spinning: Hold the fiber bunch in one hand and the spindle in the other. Roll the fibers around the spindle, then flick your wrist to create spin. As the spindle spins, the fibers will twist together, forming yarn.

Weaving the Bandage : For a more secure and adaptable bandage, you can weave the spun yarn or twisted fibers into a small cloth. Here's a basic approach:

Warp Preparation: Secure several lengths of yarn or twisted fibers (warps) onto a fixed object, like a sturdy branch or a frame made from sticks. These will be the vertical threads of the fabric.

Weft Creation: Prepare a shorter length of yarn/fibers (weft) to weave horizontally between the warps.

Simple Weaving: Pass the weft thread over and under alternating warps, creating a basic woven pattern. Continue weaving until you have a small fabric piece suitable for the wound size.

Bandage Creation:

Size and Shape: Depending on the wound, you can use the spun yarn/fibers directly or cut a section from the woven fabric to create the desired bandage size and shape.

Sterilization: Before applying the bandage, it's crucial to sterilize it as much as possible. Traditionally, boiling the fibers or soaking them in a strong salt solution were used. However, it's important to note that these traditional sterilization methods might not be as effective as modern medical techniques. In a survival situation, it's still better to use a sterilized ti plant bandage than nothing at all, but prioritize seeking proper medical attention whenever possible.

CONCLUSION:

Creating a swathe from ti plant passes on offers a clever way to deal with wound care, especially in circumstances with restricted admittance to regular clinical supplies. The interaction, while requiring persistence and practice, uses promptly accessible materials and customary procedures. The ti plant filaments' solidarity and regular properties make them a reasonable contender for making a fundamental, yet useful wrap.

Suggestions for Future Work:

Upgraded Cleansing Strategies: Exploration more powerful sanitization techniques for ti plant wraps to work on their wellbeing and viability in injury recuperating. Investigate regular options with more grounded antimicrobial properties or research the chance of carrying out safe sun powered sterilization strategies.

Fiber Treatment and Handling: Examine techniques to further develop the fiber quality. Absorbing the filaments normal tars or plant concentrates could improve strength and solidness. Furthermore, exploring different avenues regarding different plaiting or winding around methods could prompt the making of additional hearty and versatile wraps.

Restorative Properties: Exploration the likely restorative properties of ti leaves. Investigate assuming there are concentrates or mixtures inside the leaves that could be integrated into the swathe to advance mending or forestall disease.

Logical Assessment: Lead logical investigations to assess the viability of ti plant gauzes contrasted with traditional dressings. This would include testing their rigidity, sponginess, and potential for bacterial development.

Present day Applications: Investigate the chance of incorporating ti plant filaments with current clinical materials to make composite swathes that join the regular advantages of ti plants with the progressions of current medication. By digging further into these areas, we can open the maximum capacity of ti plants in injury to the board. Future headways could prompt the advancement of more compelling, reasonable, and socially delicate injury care arrangements, especially in asset restricted settings.