

SUSTAINABLE TEXTILES – PART VII

REF: TT/ JUNE 2022/ WK 2

Innovation in sustainable raw material

Besides recycled and organic fibers, many sustainable alternatives are emerging. Following are some innovations in this regard which could help in the drive for a more sustainable way of life.

- a. **Hemp Fiber** - Hemp is a fine, light-colored, lustrous, and strong bast fiber, obtained from the hemp plant. The bark of the hemp stalk contains bast fibers, which are among the earth’s longest natural soft fibers and also rich in cellulose. Unlike regular cotton, which requires huge amount of pesticides, herbicides, etc. during its cultivation, hemp requires virtually none. Hemp is naturally resistant to most pests and grows very densely. As a result, it does not need chemicals having almost no weed or insects. When grown in rotation, pests in future crops are also reduced. As an added bonus for the environment, the cultivation of hemp improves soil health by replenishing vital nutrients and preventing erosion.



Fig 1.1 Hemp fabric

Ref: fiber2fashion.com

In terms of fabric quality, hemp fabrics have good dimensional stability properties (**Do not loose shape easily**), have got good moisture wicking property and are breathable. They keep the wearer cool in the summer and warm in the winter. In addition to that, these fabrics kill bacteria, making them naturally anti-microbial. Hemp fabrics can be dyed easily and have good fastness properties. Dyed hemp fabrics can withstand multiple washes. Hemp provides sturdy and durable product while maintaining quality and softness.



- b. **Banana Fiber** – Banana fiber, also known as musa fiber is one of the world's strongest natural fibers. This fiber is used for the fashion and technical textile industries for sustainable product development. Banana fabric has properties imitating silk, the fiber material comes from the stalk or trunk portion called the “pseudo stem” of the banana plant. After the fruit is harvested, the "pseudo stem" is thrown out as agricultural waste. This pseudo stem biomass is a rich source of natural fibers. Banana fibers require lesser land, water and fertilizers to grow. Extracting textiles from banana stems require minimal energy usage and little water consumption making it a sustainable textile. It is biodegradable and has no adverse effect on the environment and thus can be categorized eco-friendly. Banana fibers have good affinity for dyes and can easily blend with other natural fibers for enhanced performance and properties.



Fig 1.2 Banana fiber and weaving of fabric

Ref: onlineclothingstudy.com

- c. **Pineapple Fiber** – Pineapple fibers are sustainable natural materials, derived from pineapple leaves. The proposed technology involved in sustainable pineapple leaf fibers (PALF) productions practicing the process that will reduce the environment pollution, minimize the waste, conserved energy and natural resources.
- d. **Vegan fur made from seaweed** - It is an innovative type of animal-free fur made from kelp seaweed. The bio-based fur innovation has begun as fashion industry has started banning animal fur.
- e. **Wool from coconut husk** - Coir is the fibrous material found between the hard shell and the outer coat of a coconut. As a natural fiber, coir is used in simple products such as floor mats, ropes, doormats, brushes and mattresses. As study says coir can reduce carbon emissions, research has been started to use coir as an animal-free alternative to wool.
- f. **Fibers from milk protein** - Casein, a milk by-product is emerging as a new type of sustainable material for textiles. The milk-based fabric has a comfortable texture, looks like cotton, and it is very healthy for skin.

References:

1. <https://www.goingzerowaste.com/>
2. <https://www.the-sustainable-fashion-collective.com/>
3. <http://www.fibre2fashion.com/>
4. <https://textilevaluechain.in/>
5. <https://therunningrepublic.com/>

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Last week`s Answers: 1) COLLECTING 2) TRANSFORMING 3) GARMENTS 4) POSSIBLE

Wishing you a great week ahead!

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