GO-GREEN TEXTILES FOR ENVIRONMENT

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Abstract
Natural fibers are significantly elongated substances produced by plants and animals that can be spun into filaments, yarns and ropes. Woven, knitted, matted or bonded are techniques to form fabrics that are essential for clothing. Like agriculture, textiles have been a fundamental part of human life since the dawn of civilization. In India, a growing shortage of natural fibre producers leads the researchers to develop new environmental friendly textile and its products. Natural fibres are at the heart of an eco-fashion movement that seeks to create garments that are sustainable at every stage of their life cycle, from production to disposal. Natural fibres have intrinsic properties such as mechanical strength, low weight and healthier to the wearer that has made them particularly attractive. Progressively, eco-textiles are being used for industrial purposes as well as in components of composite materials, in medical implants, and geo and agro-textiles.

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INTRODUCTION
Textile is the major part of the basic human needs. Environmental impacts occur at every stage of the life cycle of a product. The use of natural renewable sources for the generation of textiles includes lowest practical ecological impact during the growth stage and in the processing of natural fibers plays a major role in converting the fibers into textiles and garments using environmental friendly resources. The ecofriendly textile has already visually entered not only the shelves of natural textile shops but also of the largest retailers and brand dealers. To recognize this is a milestone of consumer recognition and a strong acknowledgement of this trustworthy quality assurance concept.

ENVIRONMENTAL IMPACT OF TEXTILE
Going “green” is the growing trend in all industries and textile industry is one of the most ecologically harmful industries in the world. Some environmental harmful stages of textile industries are fiber growth with herbicides or pesticides, dyeing with toxic chemicals, emissions to air and water, toxicity potential of processing wastes and area usage of the textile drains. The decisive factors, any material as environmental friendly are renewability, ecological path of the resource, usage of chemical to grow or to process it to make it ready for use.

Textile contributions to diminish global warming are developing of eco-friendly fibers, eco-friendly textile processing, healthy production environment, non-toxic chemical usage of the textile unit etc.

TEXTILES THAT HAVE ENVIRONMENTAL OBLIGATION
Now-a-days environmental issues are becoming the major factors during the selection of consumer goods. Renewable resources are gaining popularity among the people due to their positive effects on agriculture, environment and economy.

Natural fibres being biodegradable are now considered as solemn option to synthetic fibres for use in various fields. Some eco-friendly fiber fashions are explained below:

BAMBOO
A bamboo fiber resembles cotton in unspun form which has a puffball of light, airy fibers. Preparation of bamboo fibers can be done by both mechanical and chemical processing. Regenerated bamboo can also be manufactured by viscose route.
Scientists have found bamboo owns a unique anti-bacteria and bio agent named “Bamboo Kun”. This is the substance which is not lost after bamboo is passed through series of process for extrusion. Bamboo fiber was validated by Japan textile inspection association that, even after fifty times of washing, bamboo fabric still possesses excellent natural functions of anti-bacteria, bacteria-stasis and deodorization. It has its unusual breathability and coolness, due to its cross-sections filled with various micro gaps and micro holes and it has better ventilation and absorption.

Bamboo has a wider application due to its comfort, soft, lustre and absorbency. Example Nonwovens, baby wears, home textiles, decorative series, etc. Bamboo apparel is crowned as “Air Conditioning Dress”. Bamboo fiber is praised as “the natural, green and eco-friendly new type textile material of 21st century”.

ALOE VERA
To create a textile with the technologies developed that are soothing to the skin. The fabric can now be infused with aloe vera capsules. These capsules are microscopic, airtight and waterproof. They open to release the gel only when the fabric is touched or rubbed. Essentially, every time an infused garment is worn, the content is applied to the skin.

In addition to the skin benefits, aloe also adds a few interesting features to the fabric itself; it is naturally anti-bacterial, and so not only does it keep clothing cleaner, it also combats body odor. It is proving to be an exciting and beneficiary fiber for the wearer.

CORN
Corn fibers are bio-degradable. It posses good dye ability in comparison to some natural fibers such as cotton and milkweed fibers, and good fastness with all classes of dyes. The energy required for production of corn fibers was low. Corn-based polylactide (PLA) is used for wide range of applications similar to polyethylene terephthalate (PET) based on renewable resources. Corn is a clean product; i.e., on reaching the end of its lifetime, it is completely biodegradable, compostable, burnable (without producing dangerous fumes) and recyclable.

Corn fiber has already threaded its way into some winning outfits produced by designers from across the globe. Corn fiber manufacturers have claimed that these fibers can be used for sportswear, jacket, outer coat, apparels etc.

PINEAPPLE
Fibres can be extracted from the waste of pineapple fruits. These fibres are called ‘pina’, in Spanish which gives the meaning pineapple. These fibres are likely to be very soft, and are easily broken. So the process is usually becomes slow and time consuming. Extracted fibres are handspun into ivory shaded, which gives natural glossy fabric.

To make pina fabric strong, they are also blended with other fibres. If it is blended with silk, they are known as pina-seda. It is very soft and lustrous. These fabrics are light weight, and easy to maintain. Pineapple fibres are blend well with other fibres. Moreover fabrics made from pineapple fibres have an elegant appearance. After many inventions, pina fabrics can rightly be commended as heirloom textiles used for hometech, auto mobitech and geotech.

BANANA
Banana fibres are extracted from the barks of the banana tree and are biodegradable. These fibres are bonded by natural gums and made of thick walled cell tissues. Normally two to three outer sheaths are removed, and the intermediate layers are used. The outer layer of the plant gives coarse fibres that are very brittle and the innermost sheaths are also rejected as they contain pulpy matter. It can be easily blended with cotton or other synthetic fibers. It is popularly known as Manila hemp since decades in Philippines.

Bamboo fibers have an intrinsic worth such as high tensile strength, light weight, luster, drape and good moisture absorption. High water absorbing property of this fabric makes this clothing cool to wear.

COIR
Coconut tree is popularly known as tree of life, is useful to humans from its head to toe. These fibres have high lignin and low cellulosic content. Extracted fibres are spun into durable yarn, mostly with a brownish hue. They are light weight, resilient, and durable. Fibres extracted from activated carbon of coconut shells are known as cocoona fibres.

These fibres are used in mats, and rugs. They are also made into apparels. These fibres are fused into polyester fibres to improve its wicking and absorbing properties. Coconut fibres have the ability to protect the wearer against UV rays and have the ability to absorb and hold body odor till the fabric is washed.

JUTE
Jute is a cheapest fibre obtained from skin or bast of plant’s stem, an integral part of Bengal, in entire southwest of Bangladesh. So it is called GOLDEN FIBRE OF BANGLADESH. Due to its texture initially it was processed by hand. It is the second most important vegetable fibre after cotton, in terms of usage, global consumption, production and availability.

Today jute can be defined as an eco-friendly natural fibre with versatile application prospects ranging from low value to high value example: carpet, apparel, composites, upholstery furnishings, decorative color boards. Non-woven jute fabrics carry applications in meditech, agrotech, protech, geo- textiles and many.

CONCLUSION
Natural and organic clothing is charged more by the retailers, since the source of the fibre are free from herbicides, pesticides, or hereditarily modified for an environment and these fibres process are not practiced on a large scale. Because of all these they become a bit expensive. But, while wearing, one can feel the exotic luxury making its price immaterial. The fabrics made out of eco fibers can be worn by any one as they do not have any irritating chemicals in them. Hence the usage of eco fibers and organic are the best solution to keep our earth clean and to minimize the global warming. At present, the use and disposal of the textile will be more of environmental sustainable to minimize harm to people and the environment. These are some of the characteristics and some applications of eco-fibres but there are many more which are yet to be discovered.
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