

# Herbal Textile: A Boon to Textile Industry

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Herbal Textile is dyed entirely with herbal extractions, without using any sort of chemicals. The herbs used are different from vegetable dyes as they are not only natural but also have medicinal value. These herbs are applied directly to the fabric with the help of natural ingredients, so that the medicinal value of the herbs can be kept intact. No chemical process is adopted while dyeing. Even bleaching of cloth is done naturally by exposing it to sunlight. The herbs also do not pollute the environment through contamination of water resources in areas close to processing units. All kinds of shades of red, yellow, brown, orange and green etc. can be prepared with the help of these herbs.



When the textile is dyed with the extractions obtained from various herbs, they are referred to as Herbal Textile. When the dyeing is done with herbal extractions, no chemicals are used in its dyeing process. Whereas, some chemicals such as copper sulphate and ferrous sulphate are used as catalysts when dyeing is done with vegetable dyes. So, herbal dyes are different from vegetable dyes as they also carry some or the other medicinal value.

The concept of herbal textiles is derived from Ayurveda - a branch of Ayurveda, the ancient 5,000 year old Indian system of Vedic healthcare. Loosely translated, “ayur” is



Sanskrit for health, “veda” means wisdom, and “vastra” is cloth or clothing. Ayur vastra clothing is made from organic cotton fabric that has been permeated with special herbs and oils that promote health and cure special diseases depending upon the blends of embedded herbs and oils.

Since long time Ayurveda cloth has been in use in the treatment of a broad range of diseases such as diabetes, skin infections, eczema, psoriasis, hypertension and high blood pressure, asthma, arthritis, rheumatism, and even some forms of cancer. Ayurveda clothing is believed to help restore balance within the body's systems and strengthen the immune system.

### What Is Herb?

Herbs are garden plants that are grown and harvested for culinary, aromatic, medicinal, and fibrous uses. Plant herbs are placed in the garden for their unmistakable fragrances, attractive textures, appealing colors, and variety of home uses.

Some of the herbs used in textiles are

### 1. Turmeric-

Turmeric belongs to the same family as ginger, Sometimes known as "Indian saffron", it is the source of the familiar yellow color of many Asian curry dishes. Both the culinary spice and the dye are obtained from its root.

Turmeric was and is still used for textile painting and printing in India.

### 2. Indigo-

Indigo's ability to produce an extensive range of beautiful blue shades has made it the most successful dye plant ever known. The commercially available indigo powder is made from the leaves of *Indigofera tinctoria*, which requires hot, sunny, and humid growing conditions to flourish.



### 3. Madder-

Madder's leafy tops sprawl untidily over the ground and their clusters of tiny yellow flowers look insignificant. Yet to the dyer, madder is a miracle of nature because its roots contain alizarin, one of the most valuable red dye pigments ever known.

### 4. Pomegranate-

The succulent pomegranate fruit yields an ocher-yellow dye and the skin is rich in tannin, which improves colorfastness.

### 5. Onion-

The outer skin of this common vegetable is one of the most useful and readily available dyestuffs. It is ideal for a novice dyer's first experiments since it reliably produces rich, vibrant shades of orange, yellow, rust, and brown on all fibers.

## Herbs and Textile Industry

Globally, as many countries have been enforcing a ban on textiles that have been colored



using chemical dyes, this had been a body blow to the hand loom industry. At the same time, textiles dyed using natural vegetable dyes, especially medicinal plants, have been commanding a huge market due to their obvious advantages. Nowadays much of the stress in textile industry is given on Herbal dyes that use only natural plants and minerals for all steps of the production process. The advantage of the dyes extracted from the medicinal plants origin from renewable resources, limited chemical reactions involved

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in their preparation, Biodegradable properties, health curing properties, and harmony with nature.

The traditional cotton dyeing embedded with innumerable hazardous chemicals and pesticides pose a serious threat to the human skin and environment. A liberal use of dangerous chemicals in the textile industry leads to severe health problems that affect the nervous system. Alternatively, organic cotton prohibits the use of such chemicals, with a gentle attitude towards environment and skin. The word 'organic' denotes agricultural products that use no synthetic chemicals or pesticides. Herbal dyeing is famous for its Eco friendly and herbs integrated in a fabric. In this process, natural textiles are dyed with herbs like Turmeric, Henna, Aloe Vera, Indigo etc. In the whole process, no chemicals are used; the textiles are 100% safe and 100% chemical free.

### **Benefits of herbal textiles**

Herbal clothing can help reduce exposure to allergens and other irritants and give a comfortable feeling.

- Manual farming and organic practices have a lower carbon footprint as the entire process consumes less fuel and energy and emits fewer greenhouse gases compared to chemical textiles.
- Not grown from genetically modified cottonseed.
- Grown with natural rather than synthetic pesticides and fertilizers, no chemical defoliants used.
- Eco-friendly processing that does not compromise workers' health and helps reduce water and electric use and toxic runoff.
- Strict testing ensures the absence of contaminants like nickel, lead, formaldehyde, amines, pesticides and heavy metals.
- People with allergies and chemical sensitivity especially benefit from organic cotton clothing, as conventional cotton may retain harmful toxic residues. Even if you don't have sensitive skin, organic cotton will just feel better against your skin.
- Children are at greater risk for pesticide-related health problems. Organic Cotton though grown without using pesticides & insecticides is still dyed using hundreds of so called low impact chemical dyes adults. Millions of children in the US receive up to 35% of their estimated lifetime dose of some carcinogenic pesticides by age five through food, contaminated drinking water, household use, and pesticide drift.

### **Environmental Benefits**

- Improved soil fertility
- Increasing cotton yields
- Massive saving of precious water. This is important as cotton is a water-hungry crop, which can cause problems in areas without high natural water availability. It has a positive effect on the content of organic matter and helps to avoid soil acidification

- It improves soil structure by increasing soil activity, thus reducing the risk of erosion
- It promotes the development of earthworms and above ground arthropods, thus improving the growth conditions of the crop. Furthermore, organic crops profit from root symbioses and are better able to exploit the soil, and organic fields accommodate a greater variety of plants, animals and microorganisms.

## The process of herbal textile manufacturing

The process of producing herbal textiles begins with 100% organic yarn / fabric and every step in the preparation of herbal cloth and clothing is carefully and precisely controlled and no chemical process is adopted while dyeing and processing the fabric. The process of herbal dyeing starts with the gray cloth passing through several stages of treatment before it becomes colorful and ready to wear. Fabric and yarns that can be used for herbal dyeing are certified organic cotton, natural cotton, silk wool, linen, jute, hemp and their natural blends.

1. **Desizing:** The washing of processed grey / greige cloth starts with removing sizing, gums and oils used in the course of weaving by washing with natural mineral-rich water and sea salts.
2. **Bleaching:** The bleaching of cloth is done naturally by exposing it to direct sunlight, then it is bleached with biodegradable, naturally derived, organic cleaning agents and surfactants like Saptala (*Acacia sinuata*), Phenila (*Sapindus mukorossi*) etc.
3. **Mordanting :** To make the colors bright and fast, natural mordants such as, myroballans, rubhabs leaves, oils, minerals, alum, bark of lodhra (*Symplocos racemosa*), kenduka (*Diospyrose ebenum*), fruit extracts of haritaki (*Terminalia chebula*), iron vat, etc, are used, but mordants like copper, chrome, zinc, tin, etc, are avoided due to the environmental reasons.
4. **Dyeing :**
  - The organic cotton yarn or fabric is then dyed in a carefully controlled mixture of herbal dyes depending upon the disease or ailment being treated.
  - The dyes used for dyeing herbal clothing comes by blending and carefully preparing different medicinal herbs, plants, flowers, roots and barks.
  - The temperatures of the dyes, the duration and number of the dye soaks, the blend of herbs, and even the equipment used are carefully controlled.
  - These herbs are applied directly to the fabric with the help of natural ingredients, so as to keep the medicinal value of the herbs intact.
  - All kinds of shades of red, yellow, brown, orange and green, etc, can be prepared with the help of these herbs.
  - The medicated cloth is allowed to cool and repeatedly washed to remove any loose particles and is always dried in shades.

5. **Finishing** : The finishing process used after herbal dyeing is also organic and is given by sprinkling pure water on the cloth and then stretching under pressure, using hand rolls, aloe vera, castor oil etc.
6. **Recycling residue** : The entire process is organic. It does not pollute the environment like synthetic dye. Solid and liquid waste is separated through the process of filtration and used for farming purposes - as a manure and for watering the fields and the waste is used as bio-manure and also to generate bio gas.

### **Use of herbal textiles**

The most effective time to use herbal clothing is when the body is at rest such as during sleep or meditation because this is when the body is naturally healing and reestablishing balance. Skin is recognized as being the body's largest organ. The skin can act as a barrier but also as a conduit for outside substances to enter the body. Many environmental toxins and chemicals in conventional clothing are assimilated into the body through the skin. Anything which can improve the skin's natural ability to block and resist harmful chemicals and toxins from entering the body will be beneficial to health.

Keeping this in mind, herbal textile is often used in making bed coverings, undergarments, towels, meditation clothes, sleepwear, and other such garments that stay close to human skin so that all its benefits could be absorbed through the skin. The technology for making herbal clothing is also being utilized for making coir mats, mattresses, door mats and carpets. For coir mats, the fibers are first soaked in herbal dyes and then woven into coir mats.

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