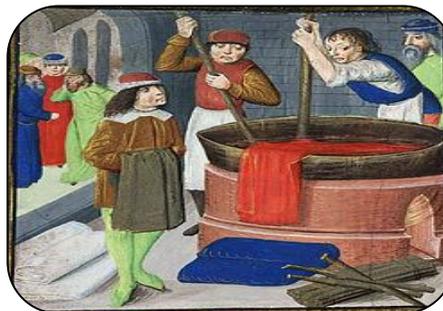




HISTORY OF NATURAL DYES

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ABSTRACT:

The art of dyeing was as old as human civilization. From the historical records, it is learnt that natural colorants were available to people during GrecoRoman periods. Our Vedas, the Atharvathe natural dyes. The use of natural dyeing materials is evident with the wall paintings of Ajanta, Ellora etc. The history of colour is fascinating from a social and artistic viewpoint because it shows the way; use; and importance acquired. Man has been fascinated by the variety and beauty of colors present in nature. Love for color is a natural instinct. Even in the prehistoric times, man realized that certain plant juices and extracts from certain organisms, produced colors which would last long. He started using these for coloring. Later he learnt to dye clothes prepared from natural textile fibers such as cotton, wool, silk. Colour has contributed to the social and symbolic development of civilizations. Colours are frequent in our life, but sometimes we ignore the social-historical phenomenon that made colour an essential element of expression and communication for human beings. Colour has influenced people perception and has played a crucial role in social and natural environment acceptance. The natural dyes are made from plants, minerals, animals and, insects using environmentally-friendly solvents. With the improvement of living standards, everybody is very much conscious about environmental protection and health safety. Natural dyes have attracted more attention to the industry due to exhibiting better biodegradability and more compatibility with the environment. The first natural dye use was found around 2600 BC. Originally, dyes were made with natural pigments mixed with water and oil used to decorate skin, jewellery, and clothing. Natural dyes were used on caves in places such as Spain. Data show that dyeing was done by, barks, plants and insects in China about 5000 years ago.

Natural dyes are color substances obtained from natural sources. Natural dyes are used for all types of textile dyeing and printing until the middle of the nineteenth century. The use of natural dyes was reduced due to the advent of synthetic dyes, though they were economical and possess excellent fastness properties.

Advantages Of Natural Dyes:

1. Natural dyes come from natural sources.
2. Natural dyes are biodegradable and disposing of them doesn't cause pollution.
3. Some natural dyes possess mosquito repellent and flame-resistant property.
4. Natural dyes are having minimal environmental impact.
5. Produces soft and soothing colors.

6. Natural dyes are obtained from renewable sources that can be harnessed without imposing harm to the environment.
7. Natural dyes like turmeric have anti-microbial properties and hence protect the fabrics and wearers from microbial attack.
8. Natural dyes are not harmful to the environment, which makes them so appealing to consumers.
9. Some natural dyes, such as carmine found in lipsticks, will not cause harm or health problems when ingested.
10. Natural dyes are extracted from natural sources and hence they are eco-friendly.

Disadvantages Of Natural Dyes

1. Availability of natural dyes depends on the seasons.
2. Dye extraction is a time-consuming process.
3. The natural dyeing process is difficult to standardize.
4. Natural dyes are difficult to store.
5. Impurities in natural dyes fade away the color produced.
6. Reproducibility of the same color shade is difficult.

Classification Of Natural Dyes :

Natural dyes are classified into three types based on the source of origin namely i) vegetable dyes, ii) animal dyes, and iii) mineral dyes.

Plant Dyes:

The earliest dyes were of vegetable origin, discovered by accidentally staining garments with juices of fruits or plants. Vegetable dyes are obtained from different parts of plants such as leaves, flowers, fruits, bark, etc. These vegetable dyes can be applied directly or with different mordants.

Henna:

The dye is extracted from the dried leaves of the Henna plant, . It produces yellowish-orange color. It is suitable for dyeing wool and silk fibers.

Indigo:

Indigo (blue dye) is called the king of all-natural dyestuffs. It imparts blue color. It is extracted from the leaves of the leguminous plant . It is suitable for dyeing cotton and wool.

Indian Madder:

It produces shades of red on textile fabrics. It is used for dyeing cotton and woollen fabrics. It is extracted from the roots of *Rubia tinctoria*.

Turmeric:

It produces shades of yellow on fabrics. It is suitable for dyeing cotton, silk, and wool. The yellow dye is extracted from the ground root (rhizome) of the turmeric plant (*Curcuma longa*).

Marigold:

It is extracted from lemon or orange-colored marigold (*Calendula officinalis*) flower. It is suitable for dyeing both silk and wool fibers.

Logwood:

It may also refer to members of the genus *Xylosma*, part of the willow family. The dye is extracted from the core heart of the logwood tree, it creates black color.

Saffron: It is a spice derived from the flower of *Crocus sativus*, commonly known as the "saffron crocus". The dye is extracted from stigmas of the common crocus.it produces from yellow color.

Animal Dyes:

Tyrian purple or Royal purple:It was extracted from a gland of purple snail by a process developed by Phoenicians.It was very costly.Chemically it is 6,6 -dibromoindigo.

Cochineal:It is obtained from female insects species *coccus cacti*.It dyed a crimson shade on an aluminium mordant.Chemically it is carminic acid.

Limitations of Natural Dyes:

1. Natural dyes are from plants and animals.
2. These dyes are ecofriendly. Synthetic dyes are dependent on petroleum.
3. Natural dyes were prepared by extraction method. These method has number of limitations and are unsuitable for large scale preparations.
4. Extraction methods are laborious and time consuming.
5. Only a small quantity of dye is extracted from a very large amount of raw material. These dyes are very costly.
6. These dyes also lack of uniformity of quality. The fastness properties are not good.

Now a days, only a handful of natural dyes are prepared from natural sources otherwise they are largely replaced by synthetic dyes.

Important milestones in the development of synthetic dyes: Founder of modern synthetic dyestuff industry is a British Chemist William Henry Perkin. In 1856, he synthesized first synthetic dye, Mauve from coal tar. It is purple dye.

Conclusion :

In conclusion, natural dyes offer a host of benefits for human being. This article gives information about natural dyes, their types, classification, advantages & disadvantages. Natural dyes supposed to be a cheap, non toxic, renewable, and sustainable resources.

References:

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