

Summary

Title of research project (BOTANY): ***"Bioprospection of Underutilized Plant Resources for Natural Dyes"*** (UGC F. No. 47-129/12(WRO)).

Different parts of the plants were used for the extraction of dyes such as leaves, flowers, fruits, bark, etc. In ancient days people have used natural dyes to paint their caves. Over 15,000 BC man began to produce those natural dyes which have been used in textiles as well. In order to understand the art and history of dyeing, we must first understand the process of dyeing itself.

Eventually, the old natural dyes lost popularity in favour of the newer synthetic ones. The alchemy of colors started from early time. With the modern phases of development, dyes have become the most important resources, owing to their multifarious utilization, including an emerging branch of medicine i.e., Chromotherapy which greatly depends on natural coloring dyes. Usually, methods of collection and extraction of dyes are still crude and traditional with only a few experts related to cottage industries being well versed with dyeing procedures. Indigenous traditional knowledge on various resources including dye yielding plants is very essential for rural based development and future bioprospecting, provided proper precautionary measures are considered for sustainability, conservation and value based selection of use pattern. Nowadays most of the natural dyers are interested to use natural dye materials in the same ways used for synthetic dyes. Textile dyers must know the chemistry of these natural colors and its added advantages of medicinal values. Use of suitable binary or ternary mixtures of similar or compatible natural dyes for coloring natural eco-friendly textiles in variety of soothing / uncommon shades with eco-friendly mordants and finishing agents are the most desirable product of the customers for future. So, a textile dyer must know the effects of variability for extraction, mordanting and dyeing and should follow only the standardized recipe for selection fiber mordant natural dye system to get reproducible color yield and color matching besides to follow different eco-

friendly ways to improve color fastness to a possible extent. Thus with the worldwide concern over the use of eco-friendly and biodegradable materials, the use of natural dyes has undoubtedly once again gained interest and momentum.

Extraction of natural colours from 26 plants gave various shades of colours. Yellow colour is found most dominant in the nature total 9 plant species show yellow colour. Orange colour has been extracted from 4 plant species.

While dark brown from 6 species and light brown from 4 species and blue and red from 2 species each.

After extraction dyes were tested for pH sensitivity and heat sensitivity tests. Thereafter the studies on applications of natural colours on cloth, talcum powder and cheese were carried out.

PRINCIPAL INVESTIGATOR