



NATURAL DYES FROM FOREST BIOMASS

Mission

- To promote the use of natural dyes as safe substitute of synthetic dyes aligning to the concept of circular economy.
- To create sustainable and economically viable business models while contributing to environmental conservation and social well-being.

Sources

- Biomass residues (*Eucalyptus* hybrid, bark of *Populus deltoides* (Poplar) and *Shorea robusta* (Sal), needles of *Pinus roxburghii* (Pine), spent biomass of *Tagetes minuta* (wild marigold), fruits' pericarp of *Terminalia chebula*, leaves of *Cassia occidentalis* (Bari Kasondi), *Mimosa himalayana* (Himalayan Mimosa), *Prosopis juliflora* (Vilayti babool))
- Noxious weeds (*Lantana camara*, *Parthenium hysterophorus*, *Eupatorium adenophorum*, *Stevia ovata* and *Ageratum conyzoides*)

The Process

Standardized protocols for extraction of dyes and their dyeing on different fabrics

Simple, cost-effective and adoptable by local people.

Properties of dye

- Dyes have excellent to very good fastness properties establishing their commercial significance.
- Qualify all the testing parameters and quality norms of commercial natural dye



Advantages of Natural dyes

- Environment friendly
- Non-toxic having no health hazards
- Various shades can be developed from a dye
- Practically no or very mild chemical reactions are involved in their preparations
- Plant materials used are biodegradable, and thus no disposal problems
- Help in utilization of wastelands, weeds and waste biomass
- Employment generation for artisans and local populace
- Opportunities for economic development, environmental conservation, and the promotion of circular economy principles.
- Promotion of cottage and small scale industry



Beneficiaries of the Technology

- Khadi and Village Industries Boards (KVIB)
- State Forest Departments
- NGOs and Women Self Help Groups (SHGs)
- Textile Industries (Cottage level)
- Wood based Industries (Paper and Plywood)
- Handicrafts manufacturers



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