





Biotech Consortium India Limited (BCIL) is seeking companies interested in commercializing a technology for the production of Natural Red colour dye from *Rhododendron*. The technology developed at the Institute of Himalayan Bioresource Technology (IHBT), India is a major breakthrough leading to the development of safe and effective natural dyes suitable for human use.

Introduction

The relevance of natural products for the well being of global society and environment has been widely recognized. In the colors and dyes arena, there has been a global concern regarding the harmful effects of synthetic dyes and colours, due to several associated drawbacks like carcinogenicity, allergenicity and their non-biodegradability. The natural dye from *Rhododendron* being safe and eco-friendly has the potential to address this global concern.

Rhododendron arboreum, commonly known as rose tree is well known for its wide applicability as food and medicine. It is used as food preservative and as pickle. As medical properties, it is used for nose bleeding, female reproductive dysfunction, head ache and fever. Scientists, in the present technology have recognized *Rhododendron arboreum* as a promising source of natural dyes. They have successfully developed a technology for isolation of dye (non-hygroscopic and crystalline colour rich fraction) from this plant with excellent colouring properties on silk, nylon and wool. In addition, extensive toxicological data of the isolated dye has shown it to be suitable for human use.

Technology:

-  **Isolation and Characterization of Brick Red coloured Natural Dye**
-  **Source:** Flowers of *Rhododendron arboreum*
-  **Nature of material:** The dye is of natural origin. Ecofriendly method has been employed for purification of coloured fractions.
-  **Physico-chemical properties:**
 - Non-hygroscopic, crystalline in nature
 - Readily soluble in water as well as alcohols

Salient Features

1. Non-hygroscopic, crystalline in nature and possess enhanced shelf life and stability.
2. The isolated dye is soluble in water and alcohol.
3. **Excellent Efficacy:** The isolated dye shows excellent colouring properties on silk, wool and nylon.
4. **Promising antioxidant activity:** Trolox Equivalent Antioxidant activity (TEAC) determined by ABTS assay revealed promising antioxidant activity of the isolated dye.
5. **Biologically Safe:** Toxicology studies done as stated below for one of the isolated dyes has confirmed the isolated dye to be safe for human use.
 - a. Sub Chronic oral toxicity study in rats
 - b. Passive cutaneous anaphylaxis test.
 - c. Prausnitz-Kustner test.
 - d. Enzyme linked immunosorbent assay (ELISA) test.

About BCIL

BCIL was incorporated as public limited company in the year 1990 under the Indian Companies Act 1956. It is promoted by the Department of Biotechnology, Government of India and is financed by several all India financial institutions, venture capital funds and the corporate sector. BCIL has been actively involved in technology transfer, project consultancy, fund syndication, information dissemination, and manpower training & placement related to biotechnology over the last decade and half. It has assisted hundreds of clients including scientists, technologies, research institutions, universities, first entrepreneurs, the corporate sector, national and international organizations, central government, various state governments, banks and financial institutions.

BCIL uses its expertise in facilitating licensing agreements that allow healthy and productive cooperation between the inventor and the licensee. The technologies offered by BCIL are selected after meticulous examination of their innovativeness and their scientific as well as commercial potential. BCIL licensed 15 technologies developed at government funded research institutions for commercialization by the private sector in the last 5 years.
