

## COMPARATIVE STUDY ON PHYSICO-CHEMICAL PROPERTIES OF ROSELLE (*HIBISCUS SABDARIFFAL*) AND RAMIE FIBRE

Meenakshi Tamta & Binita Baishya Kalita

Research Scholar, Department of Textile and Apparel Designing, College of Community Science, Jorhat, Assam 785013,  
India

### ABSTRACT

Natural fibre seems to be the most imminent alternative for chemically treated synthetic fibres. Natural fibre based products are now getting more preference across the globe over synthetic fibre products which have less bio degradable characteristics. Roselle, one of the most important horticulture crop it could be utilize for extraction of fibre. Fibres extracted from Roselle and ramie degummed with 3%  $\text{Na}_2\text{CO}_3$  solution at  $95^\circ\text{C}$  for 2 hours and Bleached with hydrogen peroxide at  $90^\circ\text{C}$  for 60 minutes in a close vessels and analysed for their physico-chemical and mechanical properties. The physical dimensions of fibres such as length, diameter, and wall thickness were measured. The tensile strength of these fibres varies from 30 g/tex to 40 g/tex and elongation were maximum after bleaching process. The untreated fibres have more tensile strength than the treated one. The chemical compositions like cellulose (64.50) were high after bleaching was as, hemicelluloses content decreased. The SEM and FTIR test were done for the mechanical analysis of the fibres. By comparing all the properties, it may be said that, the blending of the roselle-ramie can take place for the production of good quality textiles.

**KEYWORDS:** Bleaching, Degumming, Fibre Fineness, Tensile Strength, SEM, FTIR

---

### Article History

**Received: 12 Oct 2020 | Revised: 13 Oct 2020 | Accepted: 20 Oct 2020**

---