



Study of Physical and Chemical Properties of Silk and Methodology Of Sericulture

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Introduction : Silk is the most elegant textile in the world with unparalleled grandeur, natural sheen, and inherent affinity for dyes, high absorbance, light weight, soft touch and high durability and known as the “Queen of Textiles” the world over. On the other hand, it stands for livelihood opportunity for millions owing to high employment oriented, low capital intensive and remunerative nature of its production. The very nature of this industry with its rural based on-farm and off-farm activities and enormous employment generation potential has attracted the attention of the planners and policy makers to recognize the industry among one of the most appropriate avenues for socio-economic development of a largely agrarian economy like India.

ISSN 2454-308X



Silk is the protein secreted by the larvae of certain Lepidopteran moths. It is fibrous in nature, and widely used for the manufacture of art clothes. The silk is derived from silk moths mainly belonging to Bombycidae and Saturniidae families of lepidoptera.

Key Words : Sericulture, Mulberry , Eri , Tasar , Muga silkworm etc.

Physical and Chemical Properties of Silk:

Silk filaments are formed of an inner core of material called fibroin covered by another substance called sericin. Fibroin constitutes about 70-80% of the filament. It is an amphoteric colloidal protein of formula $C_{15} H_{22} N_5 O_6$. Fibroin when heated burns and gives the smell of burned feather. This property is used to distinguish genuine silk from artificial silk. Sericin is also a protein of albuminous nature.

The silk fibre quality and quantity depends on the size and robustness of the cocoon. It is estimated that on an average a cocoon gives silk filament of 600-1200 m. To produce 1 lb. of raw silk about 2300-2600 cocoons are required. In terms of weight about 11 kg., of cocoon'