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Research Paper

STRUCTURAL CHARACTERISTICS OF ERI SILK COCOONS AND FIBRES

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ABSTRACT

Eri is one of the wild varieties of silk produced by the silkworm, *Philosamia ricini* (Lepidoptera: Saturniidae). The eri cocoons are soft and fibrous with white and brick red shades. Brick red eri cocoons are produced in Kokrajhar district of Assam state whereas, white cocoons are produced in other states of north-eastern region as well as some other places in India. No significant differences in cocoon quality parameters such as average cocoon weight and shell weight were observed between these two varieties. Degumming loss was reported 10 % for white variety and 12 % for brick red variety. Both the cocoon varieties consist of five distinct layers *viz*., floss, upper, middle, lower and pelade. Major quantum of *i.e*., about 90 % of silk fibres are present in the floss and upper layers, 5 % in the middle layer and the remaining distributed in the lower and pelade layers. Significant differences existed for silk fibre weight, single fibre denier and single fibre tenacity in different layers of eri silk cocoon. But no difference was noticed for single fibre breaking elongation in different layers. Regression equations between each of the parameters (average values) such as weight of degummed cocoon silk fibre, single fibre denier, single fibre tenacity, and single fibre breaking elongation vs the particular trait (average values) in different layers were established. Estimated R^2 and 't' values confirmed the significance of these regression equations.

Key words: Bave, cocoon wax, degumming, denier, floss, gland, pelade, shell, spinneret.