STRUCTURAL DIVERSIFICATION IN COCOON AND SILK ASSOCIATES IN NATURAL POPULATION OF ECORACE BARAF OF *ANTHERAEA PAPHIA*

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ABSTRACT:'Baraf' is a non Sal fed one of the wild ecoraces of tropical tasar silk insect *Antheraea paphia* naturally available in Mahanadi and Subarnarekha plane of Chhattisgarh, India because all the ecological requirements of the race are optimum. It has its superior commercial qualities like thick peduncle, hard and compact cocoons, higher shell ratio, higher reelability and low denier. The present study aimed to evaluate the 14 cocoon associates of ecorace Baraf in both the sexes and their association. The ecorace Baraf is mainly distributed on Asan (*Terminalia tomentosa*) and Senha (*Lagerstroemia parviflora*) and its association with the aboriginals in Mahanadi plane of Chhattisgarh presents an important source of earnings. The peduncle length of both the sexes of ecorace Baraf has a non significant decreasing and increasing trends. The consistencies for thickness of peduncle in female are fairly well with 8.39 % coefficient of variation as against males with 13.84 % coefficient of variation. There was no difference for thickness of peduncle between the sexes, diameter of peduncle between the sexes, breadth of cocoons between the sexes and shell weight between the sexes. The length of peduncle is associated with the nature and availability of twigs of a tree on which the tropical tasar caterpillars spin the silk to form a cocoon. This is actually the twig diameter on which the caterpillars took the base for making peduncle ring of a cocoon and two to three nearest leaves of preference of caterpillar where it associates to form hammock and then cocoon. The horizontal circumference of cocoons, longitudinal circumference of cocoons, longitudinal horizontal circumference ratio, shell weight and length breadth ratio of cocoons in both the sexes are most consistent traits. However, the changes in the length of cocoons of males and females are associated to each other hence there is a significant functional relationship. Significance difference exists (at error Df 28) among both the sexes with respect to length of cocoon ($F=68.2119^{**}$, $P < 0.01$), length breadth ratio of cocoons ($F = 105.625^{**}$, $P < 0.01$), longitudinal circumference of cocoons for both the sexes ($F = 122.5766^{**}$, $P < 0.01$), horizontal circumference of cocoons (cm) in both the sexes ($F = 43.0799^{**}$, $P < 0.01$), LHCR ($F = 150.7555^{*}$, $P < 0.05$), cocoon weight (g) between both the sexes ($F = 157.6548^{**}$, $P < 0.01$), pupa weight in both the sexes ($F = 10.8909^{**}$, $P < 0.01$), shell per cent ($F=28.6595^{**}$, $P< 0.01$) and also the volume of cocoons like other traits ($F= 39.8480^{**}$, $P < 0.01$). The functional relation between the sexes for 'Shell per cent in 'females = 16.76787 + 0.06707X. This variability is vested with potential fecundity of female moth inside the cocoons of ecorace Baraf.

Keywords: *Ecorace Baraf, Cocoon associates, DMRT, χ^2, Relation, Sexes, Regression Function*

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