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MUGA ON LITCHI IN DANDAKARNYA PLATEAU OF CHHATTISGARH

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ABSTRACT: Dandakarnya is a spiritually significant region in India, situated in the south of Mahanadi basin. The muga silkworm (*Antheraea assama* Westwood, Syn. *Antheraea assamensis* Helfer, family Saturniidae) is specifically endemic to north eastern region of India. An attempt was made to successfully rear muga silk insect on *Persea bombycina*, *Litsea monopetala* and *Litchi chinensis* in Bastar plateau of Chhattisgarh, India with a fairly well growth and were able to sustain rearing within 2 years and 2 months as against 4 years in Assam and Meghalaya. The larval period in November –December crop remained for 32 days with a yield of 57 cocoons per disease free laying. The quantitative traits of male and female cocoons were assessed for cocoon weight, pupa weight, shell weight and shell per cent. These traits of muga silk insect were at par to the Katiya crop of muga silk insect in Assam. The male cocoons of Som fed stock were heavier. The female cocoons of Soalu fed stock were heavier in comparison to Som and Litchi. This confers a fact that female cocoons of Soalu fed stock are associated with better potential fecundity. The Som and Litchi fed stocks of female cocoons however followed the same trend as adduced by Soalu fed stocks of cocoons. The variance between the cocoons of different food leaves of different sex is significantly greater than variance within the samples at 1% level of significance. The weight of a female muga moth ranged between 1.80g to 3.70g at the time of coupling with a variation of 15.31% over the mean of 2.8073g. Likewise, the weight of female moth after the egg laying remained between 0.61g to 1.26g with a deviation of 0.16983g over the mean i.e.17.15% from the mean. The difference in weight has adjudicated the energy utilized by a female moth for the eggs and associated process of releasing the eggs. It conferred the fact that utilization percent of energy in this process evinced to an extent of 64.8047±2.80574 %. The Litchi fed stock of male cocoons was significantly associated with the Litchi fed stocks of female cocoons. It confers the fact that increase or decrease in these two associated variates are uniform and thus has evinced a significant value of correlation coefficient (r=0.53459*, DF=13, P < 0.05). Contrary to this, the reverse combination of Litchi fed stock of female cocoons has no relation with the Litchi fed stock of male cocoons (r= -0.17423NS, DF=13, P > 0.05). The diagonal and pair wise comparison evinced the different magnitude of positive and negative correlation with the different level of significance ranging from r= -0.998 to + 0.992., P< 0.001 at Df 12. The variable moth weight (g) after egg laying and the variable difference in weight (g) presented significant negative correlation (r = - 0.998, P <0.001, DF 12). Contrary to this, the variable utilization percent of energy and difference in weight conferred significant positive correlation (r = 0.992, P < 0.001, DF 12).The moth weight has a positive association with the number of eggs (r = 0.781., P < 0.001., DF 12). In the present study more attention has been given to utilize *L. chinensis* as a secondary food plant of caterpillars of muga silk insect. The Govt. agency should also plant Lychee as a food plant of muga along with other reported primary and secondary food plants. The 5th stage of muga caterpillar remains for 9 days in the larval stage of 34 days of muga silk insect during November-December crop under Bastar conditions of Chhattisgarh.

Key words : *Muga, Litchi, Dandakarnya plateau.*