

STUDIES ON FAT BODY PROTEIN AND COMMERCIAL CHARACTERS OF THE SILKWORM, *BOMBYX MORI* L. TREATED WITH JUVENILE HORMONE MIMIC

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ABSTRACT

*In all organisms, the endocrine system serves as an important link between the environment and various physiological activities. The brain plays vital role in regulating the growth, development and reproduction of all prokaryotes and eukaryotes. In mulberry silkworm *Bombyx mori*, the Juvenile Hormone (JH) is secreted by corpora allatum and JH has a functional role in larval life, metamorphosis, reproduction, behaviour, diapause and communication. Proteins are important bio molecules, which play key role in the growth and development as well as silk biosynthesis, which are absorbed from mulberry leaf and get accumulated in various tissues viz., fat body, haemolymph and silk glands of the silkworm.*

Three popular bivoltines, of which two hybrids FC₁ and FC₂ and a double hybrid FC₁ X FC₂ were selected for the present investigation. The 5th instar silkworm larvae (day three and day five) were utilised for exogenous administration of juvenile hormone analogue (Samrudhi) in three different concentrations 15, 20 and 25 µl and their fat body was collected after 24, 48 and 72 h. of treatment along with control and absolute control. The samples were subjected to quantitative estimation of total protein following Lowry's et al. (1951) method. The results clearly show that gradual increase in the protein content along with the increase in concentration of JH (15, 20 and 25 µl) in both the hybrids and double hybrid under study. The protein content is higher in double hybrid FC₁XFC₂, followed by the hybrids FC₂ and FC₁. The larval duration, cocoon and shell weight, filament length exhibited marginal increase as the concentration of JH treatments.

KEYWORDS: Juvenile hormone, Protein, *Bombyx mori*, fat body

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