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Involvement of acid phosphatase in degeneration of the silk gland of the tasar silkworm, *Antheraea mylitta* (Drury) (Lepidoptera: Saturniidae)

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ABSTRACT: Increased level of phosphatase activity during the period of degeneration of the silk gland of the tasar silkworm, *Antheraea mylitta* was demonstrated.

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KEYWORDS: silk gland, acid phosphatase, *Antheraea mylitta*

Histological studies revealed degeneration of silk gland in the last instar larva of *Antheraea mylitta* (Lepidoptera: Saturniidae) during 18 to 21-day period (Barsagade and Tembhare, 2000). Electron microscopic studies showed a large number of lysosomes attacking nuclear and cytoplasmic organelles and causing degeneration of the gland (Ghonmode and Tembhare, 2003). Degeneration of the silk gland in *A. mylitta* was also found to be due to the effect of β -ecdysone (Tembhare and Ghonmode, 2002). The present study was therefore undertaken to investigate involvement of acid phosphatase in degeneration of silk gland in *A. mylitta*.

From the culture of *A. mylitta* maintained in the Central Tasar Research and Training Institute (CTRTI), Basic Seed Multiplication and Training Centre (BSMTC), Dawadipar, Bhandara (M.S.), India, the last instar larvae were sacrificed on 3, 6, 9, 12, 15, 18, 21 and 24 days of their emergence. The silk glands were dissected and processed for estimation of the acid phosphate activity using the modified method of King and Armstrong (Gutman and Gutman, 1940).

The total acid phosphatase activity increased rapidly in the silk gland of *A. mylitta* in 18–21 day old larvae (regression phase) and thereafter, dropped in 21–24 day old larvae (degeneration phase) (Fig. 1).

Our histological and electron microscopic studies suggested the period of 18 to 21 days as a regression phase of the silk gland in the larvae of *A. mylitta* (Ghonmode and Tembhare, 2003). Involvement of acid phosphatase in degeneration of silk gland in the

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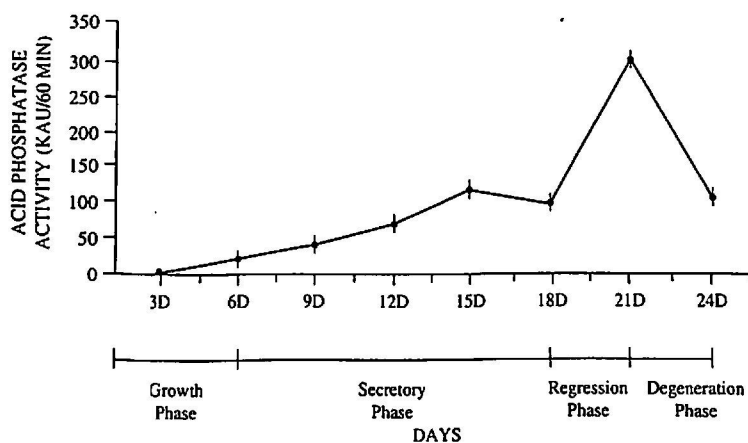


FIGURE 1. Total acid phosphatase activity in the silk gland of last instar larvae of *Antheraea mylitta*

silkworms *Bombyx mori* and *Galleria mellonella* has earlier been reported (Sehnal and Michalik, 1984). This report confirms the role of acid phosphatase in degeneration of silk gland in *A. mylitta*.

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