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Biology of Sesamum Leaf Roller and Capsule Borer *Antigastra catalaunalis* (Duponchel) in Gujarat

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The leaf and capsule caterpillar, *Antigastra catalaunalis* (Duponchel) (Pyralidae : Lepidoptera) is an important pest of sesamum. Its biology has been reported from Uttar Pradesh (Menon *et al.* 1960, Teotia and Hussain, 1965) and Punjab (Cheema and Singh, 1987). A perusal of the published literature has shown that its biology in detail has not been reported from Gujarat except a report on preliminary observation made by Desai and Patel (1965). Hence the present study was made during November – December 1993, prevailling 26.7 ± 8.15°C and 41.75 ± 12.25% relative humidity.

Initial culture was raised by collecting the larvae of the pest from the sesamum field and reared in laboratory till the emergence of adults. The freshly emerged adults were paired (female and male) and confined in a plastic jar (16 x 7 cm) containing tender leaves for oviposition and 5% sugar solution in cotton swab as food for them. Fourteen pairs were studied for egg laying capacity and longevity. The larvae were reared individually on tender leaves in the plastic box (7.5 x 3.5 cm) until pupation and adult emergence. The instar was determined by presence of the caste off head capsule. The observations on different developmental stages are summarised in Table 1.

Biology

Female laid eggs singly on the tender leaves. Egg was whitish, 0.53 mm long and 0.31 mm broad. The incubation period averaged 3.05 days. Egg viability was 96.41 per cent. Newly hatched larva was whitish, black headed, 2.63 mm long and 0.46 mm broad. The larva passed through five instars and duration of each instar was 4.64, 2.52, 1.93, 1.20 and 1.40 days. Total larval period lasted for 10-13 days. Fifth instar larva measured 15.16 mm long and 3.69 mm broad. The pre-pupal stage lasted for 1 to 2 days. It was covered by whitish silken threads. It pupated inside the webbed leaves or between the two capsules. The pupal period averaged 6.03 days. The egg period was reported to be 5.9 days (Cheema and Singh, 1987) and 4-5 days (Desai and Patel, 1965). Teotia and Hussain (1965) reported the larval period to be 18-19 days and 10-15 days (Desai and Patel, 1965). The pupal period lasted for 3-9 days (Teotia and Hussain, 1965) and 4-5 days (Desai and Patel, 1965).

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TABLE 1

Biology of *Antigastra catalaunalis* reared on sesamum (26.7 ± 8.15°C, 41.75 ± 12.25% RH).

Stage	No. studied	Duration in days	
		Range	Average
Egg	108	2.6	3.05
Larva	30	10-13	11.03
First instar	32	4-5	4.65
Second instar	32	2-4	2.52
Third instar	30	1-2	1.93
Fourth instar	30	1-2	1.20
Fifth instar	30	1-2	1.40
Pre-pupa	30	1-2	1.16
Pupa	30	5-7	6.03
Pre-oviposition	14	1-2	2.07
Oviposition	14	2-5	3.97
Post-oviposition	14	1-2	1.83
Fecundity (Eggs/Female)	14	28-173	86.94
Adult			
Male	14	3-6	4.00
Female	14	5-7	6.00
Sex ratio (Female : Male)	58	1.66 : 1.00	

The pre-oviposition, oviposition and post-oviposition periods averaged 2.07, 3.97 and 1.83 days, respectively. Females laid a mean of 86.94 eggs with an average of 28 to 173 eggs. Females survived longer (6.00 days) than males (4.00 days). The female to male ratio was 1.66 : 1 in the field collected samples. The present results of oviposition period and fecundity agree with the report of Cheema and Singh (1987). Menon *et al.* (1960) recorded 14-95 eggs per female.

Parasitism

An ichneumonid, *Eriborus trochanteratus* Morely was found parasiting the larvae of the pest. It was a solitary endoparasitoid, causing 24.00 per cent parasitism. An unidentified *Chrysopa* sp. was also observed predating upon the immature stages of the pest.

The study concluded that *A. catalaunalis* completed its life-cycle within 27.27 days during November-December under Gujarat conditions. Cheema and Singh (1987) reported the life-cycle of 51 days in winter.

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