RESEARCH COMMUNICATION

BIOLOGY OF MULBERRY SILKWARM, *BOMBYX MORI* L. IN CHHATTISGARH STATE

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Abstract: A study was undertaken on biology of mulberry silkworm *Bombyx mori* L. under laboratory condition at 20-28^{0}C temperature and 50-69% relative humidity till two successive generations. The incubation period was 6.80 days 7.20 days, larval period instarwise 3.63, 3.30, 5.30, 6.50 and 7.50 days with total larval period 26.23 days in first generation. In second generation the larval period was 4.50, 3.53, 5.50, 6.80 and 8.85 days with 28.63 day total larval period. Prepupal and pupal period period 1.20, 11.56 days and 1.43, 11.70 days in first and second generation respectively. The longevity of adult was recorded 4.94, 4.71 in female and 3.12, 3.53 days in male during first and second generation respectively.

Keywords: Insect, Temperature, Laboratory, Mulberry

INTRODUCTION

In nature insect produce difference products like silk, honey, wax, shellac, paints, medicine etc. among these silk production is gaining importance (Annonymous 1972) Silk the end product of sericulture industry occupies a prestigious place among all the fibers. It is one the strangest fibers, two third as strong as steel wire with good dye ability durability and draping qualities (Ramana 1987) Biology of silkworm plays an important role is the rearing of silkworm. Silkworm by nature one quite delicate and very sensitive to environmental condition. Chhattisgarh has huge potential to adopt sericulture. Considering this rearing with hybrid bivoltine NB4 D2x KA of mulberry silkworm were conducted to the biology performance.

MATERIAL AND METHOD

The mulberry (*Morus indica*) variety K-2 was grown in the vicinity of experimental site. All the laboratory appliances sterilized daily with formalin (2%). The eggs of *Bombyx mori* L. race NB4D2xKA bivoltine were obtained from District Sericulture office Raipur. The egg masses of mulberry silkworm (*Bombyx mori* L.) were maintained in the laboratory condition. Observation was recorded in the egg stage. The larvae were reared in rearing trays after hatching of eggs mass of *Bombyx mori* L. Provide daily four times fresh tender leaves to different instars of *Bombyx mori* L. The observation was recorded in the egg, larval, pupal and adult stages of *Bombyx mori* L.

RESULT AND DISCUSSION

Findings of the observation data on the biology of *Bombyx mori* L. are depicted in table 1.0. The egg period fluctuated between 6.8 to 7.2 days in first and second generation respectively. Roychaudhury *et al.* (1991), Alarez (1993) and Silayach and Khokhar (1995) studied variation in the egg period due to meteorological parameters.

Larval duration for first, second, third, fourth and fifth instar were recorded 3.63, 3.30, 5.30, 6.50 and 7.5 days in the first generation and 4.5, 3.53, 5.50, 6.80, and 8.50 days in second generation. The total larval period was recorded 26.23 and 28.63 days in first and second generation. Influence of temperature on the developmental period of silkworm vary distinct between the two generation observation. This conclusion also been confirmed by Alvarez (1993) who taken observation at Columbia which is the place of winter in such cool place he had recorded total larval period of 33.0 days.

Prepupal and pupal period were recorded 1.20 and 11.56 days in first generation and 1.43 and 11.70 days in second generation Khrishnaswami *et al.*(1978) reported that the pupal period observed 8-14 days. Alvarez (1993) reported 15.40 days and Koilpillai (1995) reported 10-11 days. These findings of workers are close confirmation with the present findings. The adult longevity of is in female and male was recorded 4.94 and 3.72 days in first generation and 4.71 and 3.53 days in second generation this findings is in agreement with that of Krishnswami *et al.* (1978) who reported the adult longevity 6-10 days in univoltine 3-6 days in multivoltine. Silayach and Khokhar (1995) reported longevity of male ranged between 5.48 – 6.98 days in male and 6.58-7.03 days in female. The difference of male and female longevity may be due to quality of host plant and racial characters.

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Table 1. Life cycle of Mulberry silkworm, *Bombyx mori* L.

S.N.	Stages	Duration in days	
		Istgeneration	**IIndgeneration**
1	**Egg stage**		
	Egg period	6.80	7.20
2	**Larval stage**		
	Istinstar	3.63	4.5
	IIndinstar	3.30	3.53
	IIIrdinstar	5.30	5.50
	IV^{rh}instar	6.50	6.80
	Vthinstar	7.5	8.50
3	**Pupal stage**		
	Prepupal	1.16	1.43
	Pupal	11.56	11.70
4	**Adult longivity**		
	Male	3.72	3.53
	Female	4.94	4.71

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