

Studies on Natural Food Plants of Fagara Silkworm *Attacus Atlas* from Western Ghats of Maharashtra

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Abstract: *Fagara silkworm Attacus atlas*, a wild silkworm is not reared in laboratory in spite of rich diversity of host food plants of atlas silkworm and conducive climate for rearing this worm, very little attention is paid from western Maharashtra. Therefore, boosting the atlas culture business, biodiversity of host food plants of *Attacus atlas* have been studied in all, 12 species of host food plants have been reported from Western Ghats of Maharashtra. The important species refers to *Xylocarpus granatum*, *Terminalia arjuna*, *Lagerstroemia indica*, *Lagerstroemia parviflora*, *Ocimum sp.*, *Ficus carica*, *Sapium inseguine*, *Vangueria Spinosa*, *Carica papaya*, *Psidium guajava*, *Cinnamomum verum*, *Mangifera indica*, etc.

Key words: Fagara silkworm, *Attacus atlas*, food plants, Western Ghats, sericulture.

1. Introduction

Attacus atlas a wild serigenous insect is widely distributed in western Maharashtra. It is also reported from marathwada and vidherbha region. In fact chandrapur and bhandara district of vidherbha numerous food plants are available in the forest region. Fagara silkworm is not reared in indoor rearing condition, in spite of good rearing potential and conducive climate of western Maharashtra, fagara silk culture business is neglected totally from western Maharashtra. Therefore, for popularising the concept of fagara culture and facilitating this business in better way natural food of atlas silkworm have investigated from western Maharashtra.

Several workers (Peigler, 1989; Saikia and Handique, 1998; Murphy, 1990; Rajadurai et al., 1998; Thangavellu, 1992 and Thangavellu et al., 1991; Sathe, 2007; Kavane, 2010; etc) have attempted the work related to fagara silkworm in India.

2. Material and Methods

Survey of natural food plants of fagara silkworm, *A. atlas* have been carried out from Western Ghats of visiting various places at fifteen days interval. The cocoons of *A. atlas* have been collected from different food plants. In addition, the larvae of *A. atlas* feeding on different food plants from Western Ghats have brought laboratory for further rearing and identification of the species. The twigs of host plants have also been collected for detail taxonomical studies and confirmation of their identification.

3. Results

The results recorded in table -1 indicates that in all, 12 species of host food plants have reported from Western Ghats of Maharashtra. The most dominant species of *A. atlas* food plants were *Xylocarpus granatum*, *Terminalia arjuna*, *Lagerstroemia indica*, *L. parviflora*, *Ocimum sp.* & *Ficus carica*.

Table 1: list of natural food plants of fagara silkworm *A. atlas* from Western Ghats

Sr.no	Host plant	locality	Occurrence of <i>A. atlas</i>
1	<i>Xylocarpus granatum</i>	Achara	common
2	<i>Terminalia arjuna</i>	Radhanagari	rare
3	<i>Lagerstroemia indica</i>	Radhanagari	common
4	<i>Lagerstroemia parviflora</i>	Ansukura	common
5	<i>Ocimum sp</i>	Amboli	rare
6	<i>Ficus carica</i>	Radhanagari	rare
7	<i>Sapium inseguine</i>	Malkapur	rare
8	<i>Vangueria Spinosa</i>	Ansukura	rare
9	<i>Carica papaya</i>	Chandgad	rare
10	<i>Psidium guajava</i>	Devgad	common
11	<i>Cinnamomum verum</i>	Devgad	common
12	<i>Mangifera indica</i>	Radhanagari	rare

4. Discussion

A. atlas rearing is difficult in indoor condition, since very severe mortality is noticed in silkworms. Therefore, it is extremely essential to develop indoor rearing method for *A. atlas*. We could succeed up to certain extent to rear *A. atlas* on *Ficus carica* & *Xylocarpus granatum* in indoor rearing condition. Exploiting other food plants in indoor rearing of *A. atlas* would be worth in solving the problem of rearing.

Peigler (1989) reported over 100 plant species belonging to 90 genera in 48 families as host plants for *Attacus* spp. Villiard (1969) was of the opinion that greater success on the rearing of *Attacus* larvae particularly the later instars could be achieved by feeding them on a mixed diet of above said plants.

Saikia and Handique (1998) studied the life cycle of *A. atlas* by providing main food plant *Meyna laxiflora* under which the incubation period of eggs was 10 days, the larval period was 28 days and the pupal duration was 28 days. The adult male survived for 2-3 days and female 4-6 days.

Murphy (1990) was the first to mention the presence of *Attacus* in mangrove habits, stating that *A. atlas* occurred once on *Avicennia alba* Bl. (Avicenniaceae) and simultaneously with many other trees. However, it occurred

at low levels on *Bruguiera gymnorhiza* (L.) Lamk (Rhizophoraceae).

Rajadurai *et. al.* (1998) studied the life cycle of *Actias selene* and reported that *A. selene* was distributed widely all along the mixed forests plants such *Terminalia arjuna*, *T. tomentosa* and *Zizipus mauritiana*.

Thangavellu (1991) discussed the need for conservation of wild sericigenous insects of India.

Kavane and Sathe (2007) reported rearing technique for tasar silkworm *A. mylitta*. Their results indicated that the rearing success of *A. mylitta* on *T. catappa* under laboratory conditions (24±10C, 65-70 per cent R. H. and 14 hr photoperiod) was 45 per cent. The cocoon quality was satisfactory. The silkworms were adopted in indoor rearing technique by preparing no peduncle which was normally spun by the worms in outdoor rearing was outstanding feature of the success of indoor rearing technique.

Kavane (2011) reported rearing technique for fagara silkworm *A. atlas*. Their results indicated that the rearing success of *A. atlas* on *F.carica* under laboratory conditions. Future Scope of this study must be provided in such a way that upcoming researchers can improvise on this study.

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