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 insigne, 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, inspite 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; Thangavelu, 1992 and Thangavelu 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>
<thead>
<tr>
<th>Sr.no</th>
<th>Host plant</th>
<th>locality</th>
<th>Occurrence of A.atlas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Xylocarpus granatum</td>
<td>Achara</td>
<td>common</td>
</tr>
<tr>
<td>2</td>
<td>Terminalia arjuna</td>
<td>Radhanagari</td>
<td>rare</td>
</tr>
<tr>
<td>3</td>
<td>Lagerstroemia indica</td>
<td>Radhanagari</td>
<td>common</td>
</tr>
<tr>
<td>4</td>
<td>Lagerstroemia parviflora</td>
<td>Ahsukura</td>
<td>common</td>
</tr>
<tr>
<td>5</td>
<td>Ocimum sp</td>
<td>Amboli</td>
<td>rare</td>
</tr>
<tr>
<td>6</td>
<td>Ficus carica</td>
<td>Radhanagari</td>
<td>rare</td>
</tr>
<tr>
<td>7</td>
<td>Sapium insigne</td>
<td>Malkapur</td>
<td>rare</td>
</tr>
<tr>
<td>8</td>
<td>Vangueria Spinosa</td>
<td>Ahsukura</td>
<td>rare</td>
</tr>
<tr>
<td>9</td>
<td>Carica papaya</td>
<td>Chadagd</td>
<td>rare</td>
</tr>
<tr>
<td>10</td>
<td>Psidium guajava</td>
<td>Devgad</td>
<td>common</td>
</tr>
<tr>
<td>11</td>
<td>Cinnamomum verum</td>
<td>Devgad</td>
<td>common</td>
</tr>
<tr>
<td>12</td>
<td>Mangifera indica</td>
<td>Radhanagari</td>
<td>rare</td>
</tr>
</tbody>
</table>

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 upto 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 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 larva 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 Myyna 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 present 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 Ziziphus mauritiana.

Thangavelu (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.

5. Acknowledgement

Authors are thankful to Principal, Y.C.W.M. WARANANGAR, KOLHAPUR, INDIA, for providing facilities.

References