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Major Insect Pests of the Potential Bushy Host Plant of Lac Cultivation: *Flemingia semialata*

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Flemingia semialata, a tiny bushy shrub, is a good host plant for the lac bug, Kerria lacca (Kerr), which is mostly used for kusmi lac cultivation. Globally, it is planted for soil protection and as a fodder crop. There is less information available on insect pests of the semialata plant. A study was designed to document insect infestations on semialata plants. A pest complex of 32 insect pests from six orders and 20 families has been identified. Insects attacked all major sections of the legume plant, including pods/seeds, leaves, stems, and roots, with the majority feeding on the foliage. Out of 32 insect pests, 23 are foliage feeders, 7 are sap suckers, and one is both.

Introduction

Lac is one of the important sources of natural resin, wax and dye which is produced by a specific group of scale insects called lac insect (Homoptera: Tachardiidae). The resinous protective hard shell, secreted around the insect's soft body throughout its development, is the only natural resin of animal origin. Lac cultivation is generally carried out on a limited number of indigenous tree species i.e., kusum (*Schleichera oleosa* Oken), palas (*Butea monosperma* Taub), ber (*Ziziphus mauritiana* Lam) etc., found scattered in forests and cultivable land. These plant species take years for establishment whereas bushy hosts like *Flemingia semialata* Roxb. (Family: Fabaceae) can be utilized for lac cultivation after one year of planting. The watersoluble lac dye has been used as a cosmetic in human decoration, for dyeing wool and silk and to stain leather. Lac wax is used in coating fresh fruits of apple and orange, so that their shelf-life can be increased. Aleuritic acid, the principal material in the resin, is extensively used as a starter in perfumery industry.

F. semialata is commonly known as Winged Stalked Flemingia (known as Bara solpan, Ban chola in Hindi and as Marotonoya in Oriya) but among the lac growers it is popular as semialata. Winged stalked Flemingia is an erect shrub with dense hairs on young branches.Leaves are trifoliate and flowering starts in August-September. It is a small bushy shrub and a valuable host plant for lac insect (Kerria lacca Kerr), is mainly grown for *kusmi* lac cultivation. Globally, it is planted for conservation of soil and as a fodder crop. Semialata is economically important because it is a bushy host of perennial nature suitable for *kusmi* lac cultivation.

Major insect pest of *Flemingia semialata*

- **Foliage feeding pests**

1. *Hyposidra talaca successaria*(Geometridae: Lepidoptera)-Black looper in the earlier stages, it feeds by scraping the leaves resulting in small holes, later on it starts consuming the

leaves making it leather. Its infestation in the field from July and continued till January(Fig. 1). It pupates amidst the leaves.

2. *Hypena rectivittalis*(Moore) (Noctuidae: Lepidoptera) - Lantana defoliator

Larvae feed on soft yellow leaves of the plant. First instar larvae scrap the epidermis of the soft leaves while the later stages start biting and chewing the leaves making holes in the leaf (Fig. 2). Its infestation during the month of July and continued up to November.

3. *Dasychira mendosa*(Hubner) (Lymantriidae: Lepidoptera) - Tussock moth

Larvae feed on semialata leaves from upper and outer margin and also newly emerged leaf (Fig. 3). Its infestation is noticed in the month of July and continues upto January. Tussock moths survive the winter as fuzzy egg masses and the female moths cement to their old pupal cases and cover with hairs.

4. *Spodoptera litura* (Fabricius) (Noctuidae: Lepidoptera) Tobacco caterpillar

The early stage feeds on outer margin of soft semialata leaves including the veins. In the later stage it feeds voraciously and in absence of food, the larvae can eat other larvae. Its infestation is high during July-August but decline during September onwards and continue upto October.

- **Pod/Seed damaging pests**

1.*Melanagromyza obtusa*(Malloch) (Agromyzidae: Diptera)- Pigeon pea pod fly

The Pigeon pea pod fly female oviposits individually in the developing pods. The infested pods do not show any external symptoms of damage until the fully-grown larvae chew the pod wall, leaving a thin papery membrane intact called as window, through which adults exit the pods.The percentage of infestation of the pods by this fly varies from 4% to 74%.

Figure 1: *Hyposidra successaria*(Walker)

Damage symptoms of *H. successaria*

Figure 2: *Hypena rectivittalis* (Moore)

Damage symptoms of *H. rectivittalis*

Figure 3: *Dasychira mendosa (Olene)*

Damage symptoms of *D. mendosa*

- **Sap sucking pests**

1. *Leptocentrus taurus* (F) (Membracidae : Hemiptera)-Cow bug Nymph and adults suck the sap from the tender parts of the semialata which reduces the vigour of the plants. It noticed from October to December. Cow bug/ thorn mimic tree hopper also attacks sandal and pigeon pea.

2. *Aphis sp.* (Aphididae: Hemiptera) Aphids suck the sap from the lower surface of the semialata leaves. Its infestation noticed in the month of December January.

Conclusion

Semialata, not being a plant of commercial importance except for lac cultivation, information available on insect pests of *F. semialata* is meagre**.** Looking on importance in lac cultivation, knowledge of the insect-pests of this shrub merits attention, so that resurgence of any one of the pests may not become a cause of serious concern, affecting adversely the lac production.

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