

***Trabala vishnou* (Lepidoptera: Lasiocampidae) : A polyphagous pest of forest trees in Jharkhand, India**

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ABSTRACT

The present work deals with the biology of *Trabala vishnou* (Lepidoptera: Lasiocampidae) on forest trees. Regular monitoring of forest trees during April 2022 - March 2023 for pest occurrence revealed severe defoliation by this hairy caterpillar. Caterpillars feed heavily on the tender foliage causing severe defoliation. The members of this family are called lappet moth and tent caterpillars. Studies on the biological attributes reveal the important information about the life cycle, and the better management strategy. Life cycle was studied in laboratory under normal conditions.

Figure : 01

References : 20

Table : 00

KEY WORDS : Defoliation, Foliage, Hairy caterpillar, Life cycle, *Trabala vishnou*

Introduction

Forests provide habitats for biodiversity and they are essential for the provision of a wide range of ecosystems. Forest is dynamic ecosystem and suffers to threats when faced by disturbances and undesirable agents like pests, diseases, fires and weather changes. Health of forest is vital to maintain economic, ecological and social services including wood and non-wood forest products, diversity and recreation. Trees are susceptible to insect damage just like agricultural crop. The diseases and insect pest problems lead to heavy productivity losses in forest nurseries and plantations. It causes economic losses and the raw materials are hampered. It adversely affects the wood based industries. The extent of damage depends on the stage at which they are infested and the nature of the insect. Trees are generally attacked by leaf eaters, defoliators, sap suckers, gall formers, pod or fruit borers, seed infectors etc.

Regular monitoring of forest trees during April 2022 - March 2023 for pest occurrence revealed severe defoliation by a hairy caterpillar *Trabala vishnou* (Lepidoptera: Lasiocampidae) during monsoon period. Caterpillars feed heavily on the tender foliage causing severe defoliation². It has been reported from Maharashtra, as polyphagous pest³. It is a forest and forest nursery pest in South Bihar (Chotanagpur)^{4,6-7,17}.

Further it has been recorded⁵ as a new pest of Himalayan cedar, *Cedrus deodara* from Himachal Pradesh, as a pest of pomegranate and its natural parasite in Karnataka¹⁰. Studies on the biological attributes reveal the important information about the life cycle, and the better management strategy¹⁶. The caterpillars had long tufts of urticating hairs all over body that can cause extreme itching and skin irritation when touched^{1,8}. Literature reported this caterpillar *Trabala vishnou* as a sporadic pest of castor^{11,12}. They have a wide range of host plant⁹- the forest trees, the agricultural fields and the flowering plants, their survival capacity is too much and they are never seen to damage extremely the same crop every year. It has also found on almond, jamun, guava, pomegranate^{8,11} and populus. The members of this family are called lappet moth and tent caterpillars¹⁸. Besides it has also been reported to feed on a wide range of host plant such as *Acacia confuse* (Leguminaceae), *Santalum album* (Santalaceae), *Eucalyptus globules* (Myrtaceae)¹⁴. Occurrence of *Trabala vishnou* as sal defoliator in Kanha Tiger Reserve, Madhya Pradesh was reported from sal forest¹⁵. As they are polyphagous pest, they have the ability to survive in difficult conditions also. Due to their polyphagous activity, they are never seen as a severe pest. The pest is found in both temperate and tropical climates. Different

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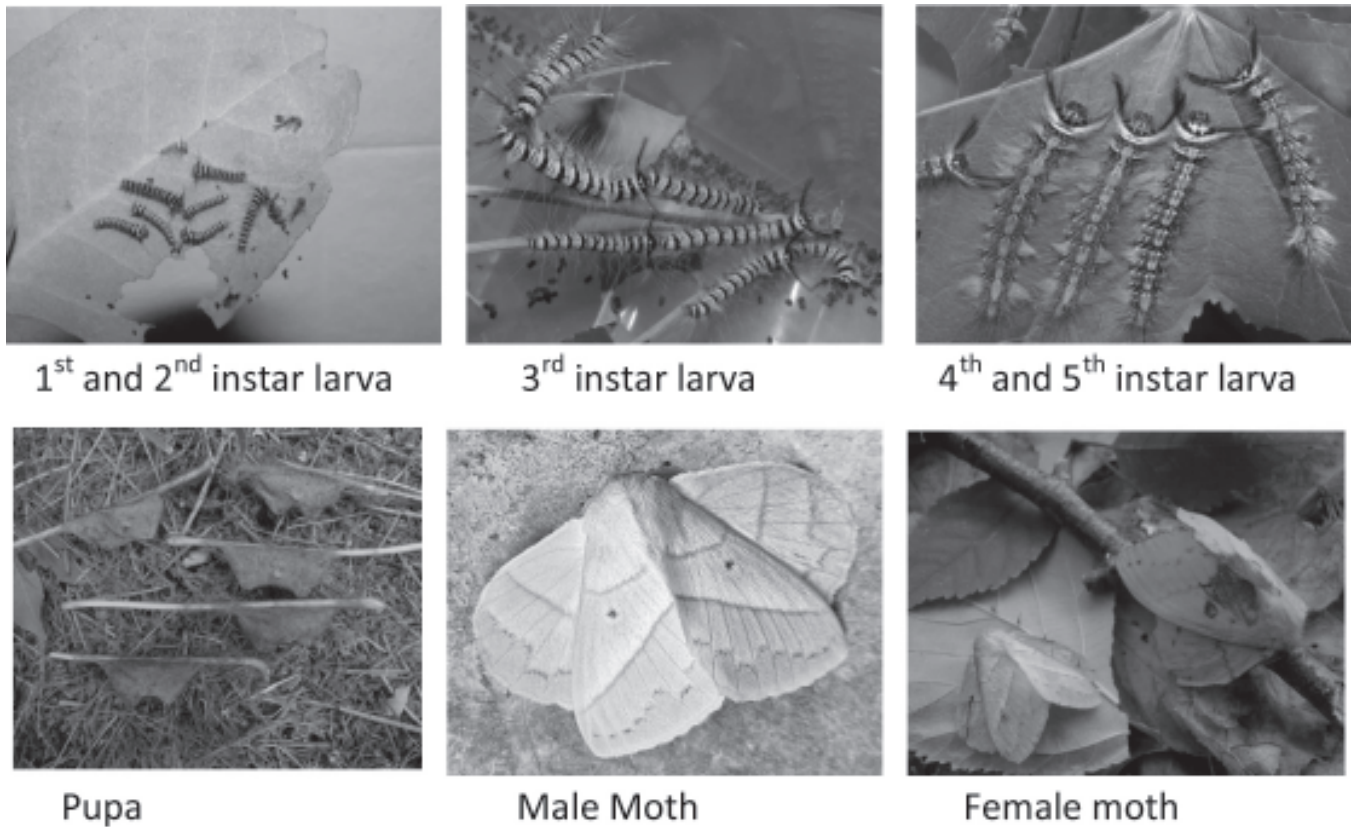


Fig. 1 : Different Stages of *Trabala vishnou*

workers studied on life cycle, morphological structure and pest status of *Trabala vishnou* in different parts of India and abroad^{13,19,20}.

Material and Methods

Different stages of *Trabala vishnou* were collected from the field and brought to the laboratory. The larva and pupa were kept in separate beakers and covered with muslin cloth. Appropriate food was provided to the larva and every day the leaves were changed. When adults emerged from pupa, sugar syrup was given as food. The eggs laid were kept separately for further life cycle studies.

The life cycle was studied both in field as well as in the laboratory. All the stages were collected for study.

Results

The total life span varies with season. In winter life span exceeds than summer season. On average the life longevity is about 35-55 days.

Egg- Eggs are creamy white and covered with brown hairs laid either on leaves or fruit calyx. The eggs are laid in rows. The incubation period varies from 8-10 days¹⁴.

Larvae- The colourful hairy caterpillars are generally found in groups. After more than a week, the 1st instar

larva is hatched. Body colour is yellow or white with black stripes, grey tuft of hairs and head capsule is orange or red in colour. Full grown larvae measured an average 5-6 cm in length with fine network of vertical/horizontal lines and up to six larval instars were reported with an average larval period of 28.3 days for both the sexes². Dark brown hairs arising from the 1st somite was noticed in all instars

Pupa: Pupation took place on the twig or plant. Colour of pupa is reddish brown and pupation takes place inside cocoon. Usually cocoons were found on the petiole of the leaves. Colour of larva and cocoon are the same. Each cocoon has two humps on dorsal sides and two openings, one on each side. Female cocoons are larger in size than male cocoons. Total pupal period was 13-18 days^{14,19}.

Adult: The adults *Trabala vishnou* are very dimorphic and have an extremely leaf-like appearance. The moths are stout bodied and eyes; antennae are somewhat feathery in both the sexes. Palpi are somewhat short. Antennae pectinate, shorter in females than males. Mid and hind tibia are with minute terminal pairs of spurs. Forewing broad, outer margin rounded, cell open. In males antenna yellowish brown. At rest the coastal edge of the lower wings projects in front of the upper wing

and there is a very close resemblance to a leaf⁸. The males are smaller than females and when freshly hatched they are bright green in colour They can be yellowish green also. Their colour also fades with time. Females are yellowish green in colour. The females have

fluffy abdomen, they use the hair to cover and protect the eggs. The life span of moth is about a week. After mating the females lay about 50-200 eggs, which are protected by the abdominal hair and die.

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