

Hawk moth infestation on durian

Infestation of hawk moth, *Daphnusa ocellaris* (Lepidoptera: Spingidae) on durian trees is becoming a common phenomenon. Serious pest infestation was first detected at Jalan Salim, Sibul in 2005. Then in April 2007, it was detected at Pangil, Sri Aman, and later in August 2009 at Jalan Salim, Sibul and Sengayan, Kanowit. The problem recurred at Sengayan, in January this year. It is suspected that a sudden change in weather could trigger the moths to multiply and when their population is high, they would migrate to look for food. Otherwise, they are found in the forest.

Pest biology

The adult moth is about 3 cm long, brownish in colour and has a distinct eye-like shape on the forewings. It is a swift flier as it has big wings. Each wing measures about 8 - 9 cm. The creamy pink egg is laid in groups of 6 - 12, on the underside of leaves. The larva is colourful, depending on its growth stages and has a spine-like horn on the dorsal side of the last segment of the abdomen. The young larva is greenish in colour, while the mature larva is bluish and a fully grown larva measures 6 - 8 cm long. The larva falls to the ground to pupate in the soil and a clicking sound is produced, when it falls down. The pupa is 4 cm long, reddish in colour and has a shiny appearance.



Adult moth



Mature larva



Pupa

Pest life cycle

The life cycle is completed in 32 - 44 days. The egg stage takes 4 - 6 days, the larval stage, 17 - 21 days and the pupa stage, 12 - 17 days.

Pest damage

The larvae feed voraciously on the leaves, resulting in defoliation of the trees. The larvae produce pellet-like grayish green frass, which are found on the ground. The presence of the frass on the ground is an indication of the larva feeding on the leaves. Affected trees suffer from severe leaf fall and dieback eventually. Fruit development in defoliated trees is retarded and the fruits fall prematurely. In severe cases, the trees are killed. It is observed that this pest prefers the very tall mature trees. There is a total fruit yield loss during the infestation period. The infested trees normally take about a year to recover, when new leaves start to appear.



Mature durian trees defoliated by hawk moth



Collected pupae

Control measures

The normal spraying of an insecticide is not practical to carry out, as the durian trees are very tall. Trunk injection with systemic insecticides such as dimethoate or fogging with deltamethrin, during the early stages of infestation is effective in reducing the pest population. Trunk injection is easy to carry out and the durian trees, being very hardy, are not affected by the drilling of holes at the base of the trees. Injecting a tree with 30 ml of pure concentrate of dimethoate is also cheap. Fogging works well in farms, with very close canopy, as there is less wind movement.

The pupae are also often collected for fish baits and food. This is encouraged as it could reduce the pest population.

Pest detection

The main problem in managing this pest is that the infestation is only noticed, when the leaves are all eaten up and the larvae fall to the ground to pupate. Reports on the pest infestation are often late. In this situation, it is too late to implement any control measure. We have to be vigilant, to detect the initial sign of the infestation, which is the presence of frass on the ground.

Article contributed by Megir Gumbek

Contact: megirg @sarawaknet.gov.my