

Research Title	Life History of Litchi and Longan Fruit Borer (<u>Conopomorpha</u> sp. : Gracillariidae : Lepidoptera)
Author	Ms. Nuchjarin Boontum
M.S.	Biology
Examining Committee :	

Assoc. Prof.	Paitoon Leksawasdi	Chairman
Lecturer Dr.	Jamnong Uthaibutra	Member
Assist.Pro.Dr.	Manas Titayavan	Member

Abstract

Populations of the fruit borer were surveyed in 9 litchi orchards in Lamphun, Chiang Mai and Chiang Rai provinces, longans were studied in 4 orchards. Fruit borers were collected using the lamps and light traps. Only 2 adults of the species were collected. Fallen fruits of both species were kept to search for eggs. After that kept the fruits to study the pupa stage. In 1991 and 1992 12% and 88% out of 14,136 fallen litchi fruits were found to contain eggs and pupa respectively. From 36,501 fallen longan fruits 2.38% and 97.62% had eggs and pupa during 1991 to 1992.

Moths laid eggs on the fruits. The average egg stage lasted 3.00 ± 0.50 days. Three larval instars occurred after 4.30 ± 0.45 , 5.75 ± 0.43 and 5.30 ± 0.46 days. The larva were inside the fruits but the final larva instar came out of the fruit and spun fibers to make a cocoon. The average prepupa stage was 1.04 ± 0.20 days, the post pupa stage was 6.08 ± 0.48 days, and the adult stage was 4.80 ± 0.83 days. After that there were able to reproduce.

Experiments covering infructescences by nylon mesh and without it were studied. The examined infructescences were divided to 3 zones: the top, the middle, and the bottom. The numbers of the initial, the fallen, and the remaining fruits of the zones from the covered and uncovered situations were not different. The fruits were always clustered in the middle zone of the infructescences. The expected main cause of fallen fruit was from the fruit borer, but in this research; most of reason was due to infertility of fruit failure. Bored fruit characteristic from the effect of this larvae. This larvae bored the young fruits when the funiculus tissue were soft and greenish while the developing fruit funiculus turned to yellow-white and coated seed, most infestation were on the funiculus tissue.

The external morphology of fruit borer moth was studied. Eggs were oval and had a rough shell. The larva were white and lost their 6th abdominal prolegs during the last instar stage. The obtect pupa were yellow-brown. The ovate cocoon was white ageing to yellow. Coloration of the scales in adults varied from black to white, brown, or mixed. The antennae were longer than the body being the same as in the pupa. The tip of the front wing had yellow scales. The number of frenula, the end of abdomen, and the characteristics of the perimal abdominal segment could be used to distinguish sex. The reproductive organs of females had 4 ovarioles in the ovary and bursa copulatrix, but the aedeagus of the males were long.

The parasites of fruits borer larvae-pupae were identified as belonging to the Family Braconidae, Order Hymenoptera. Two species of this family were recorded during this study; the first was yellow and bigger than the other.