Pest Management in Horticultural Ecosystems,
Vol. 16, No. 1 pp 78-79 (2010)

SHORT NOTE

OCCURRENCE AND BIOLOGY OF SEMILOOPER, *Hypena sagitta* (Fabricius) (= *Dichromia orosia* Cramer) (LEPIDOPTERA: NOCTUIDAE) ON INDIAN IPECAC, *Tylophora indica* (Burm. f) Merr.

V. SRIDHAR* and B. JHANSI RANI

Division of Entomology and Nematology, Indian Institute of Horticultural Research, Hessaraghatta Lake P.O., Bangalore – 560 089, India
*Email : vsridhar@iihr.ernet.in

Indian ipecac, *Tylophora indica* (Burm.f) Merr. is an important medicinal plant grown in India. It is a climber distributed in Assam, West Bengal, Orissa and Peninsular India. Leaves and roots are used as substitute for ipecacuanha; as emetic, diaphoretic and expectorant. The plant is also used for treating asthma, bronchitis, whooping cough, diarroahea and dysentery (Singh *et al*., 1983). A semilooper, *Dichromia orosia* Cramer (Lepidoptera: Noctuidae) was recorded as an important pest on this plant (Devaiah *et al.*, 1983). A thorough review of literature has revealed that the genus *Hypena* has about 20 junior synonyms and *D. orosia* is a synonym for *Hypena sagitta*. The larva feeds on all the parts of the host plant. The pest causes 50-70% defoliation when the incidence is severe. Occurrence of the pest was observed mainly during August-December, coinciding with the flowering of the plant. No information is available on the biology and feeding preference of *H. sagitta* on *T. indica*.

Keeping this in view, the studies on biology and feeding preference of the pest to various plant parts were conducted under laboratory conditions at Indian Institute of Horticultural Research, Bangalore during July-September 2006. For the biology studies, larvae of *H. sagitta* were collected from the field and reared on host plant twigs in the laboratory till adult emergence. Freshly emerged adults were used for further study of various biological attributes. Five pairs of male and female adults were kept in plastic boxes (15 cm x 10 cm) provided with 10 % honey solution and plant twigs. Observations were recorded daily on egg laying and other life parameters. For studying the feeding preference of various plant parts, known weight of leaves, flowers and fruits were provided as food to the third instar larvae of the *H. sagitta* in Petri plates. The experiment was conducted in a Completely Randomized Design with seven replications. Two larvae were released per replication. Weight of the plant part fed by larvae was recorded after 24 hours. The data were subjected to statistical analysis through ANOVA and DMRT (Gomez and Gomez, 1984).

The observations on duration of various life stages of the pest are presented in the Table 1. Eggs were light yellow, spherical, netlike and were laid singly on leaves. On an average, each female laid 172 eggs which took 4.4 days for hatching. The percent hatching recorded was 85.71. There were five larval instars in the life cycle of

H. sagitta with total larval period of 25.5days. The pupae were brown in colour and pupal period lasted for 7.7±0.64 days. The total developmental period was 37.6±0.59 days, with the adult longevity of 21.5 days. Observations on the related species of the semilooper, *H. laceratalis* on lantana showed 5 instars with total developmental period of 24.92 ± 3.5 days (Visalakshy and Jayanth, 1990).

Table 1 : Duration of various life stages of *H. sagitta* on *T. indica*

Biological attributes	Developmental Period (days)*	Range (days)
Egg	4.4±0.49	4-5
Larva:		
I instar	3.4±0.49	3-4
II instar	4.1±0.30	4-5
III instar	4.7±0.90	4-6
IV instar	5.6±0.80	5-7
V instar	7.7±0.78	6-9
Total larval period	25.5±0.65	22-31
Pupa	7.7±0.64	7-9
Egg to adult	37.6±0.59	36-40
Adult longevity	21.5±1.69	18-23
Fecundity	172.4**	140-205
Hatchability (%)	85.71	

* (Mean ± S.D. of 10 observations)
** (Mean ± S.D. of 5 observations)

Feeding preference of *H. sagitta* to the plant parts of *T. indica* is presented in Table 2. Based on per day consumption by larvae, it can be inferred that growing flowers (1.36 g) were most preferred, followed by leaves (0.42 g) and fruits (0.10 g) for feeding. Highest feeding preference to floral parts by the pest might be the reason for its peak incidence, coinciding with the flowering of the plant.

Table 2. Feeding preference of *H. sagitta* to different plant parts of *T. indica*

Plant part	Consumption (g/2 larvae/day)*
Leaf	0.42^{b}
Flower	1.36^{a}
Fruit	0.10^{c}
SE m	0.04
CD (p=0.05)	0.11
CV (%)	14.96

* Mean of 7 replications.

ACKNOWLEDGEMENTS

The authors are thankful to the Director, IIHR, Bangalore for providing facilities for the studies.

REFERENCES

Devaiah, M.C., Gouda, R.R., Kotikal, Y.K. and Yelshetty, S. 1983. A noctuid defoliator pest, *Dichromia orosia* Cramer (Noctuidae : Lepidoptera) of antamul, a medicinal plant. *Journal of the Bombay Natural History Society*, **80** (3): 659.

Gomez, K.A. and Gomez., A.A. 1984. Statistical Procedures for Agricultural Research, pp. 680. Johan Wiley & Sons, New York.

Singh, U., Wadhwany, A.M. and Johri, B.M. 1983. Dictionary of Economic Plants in India, Indian Council of Agricultural Research, New Delhi. Pp. 234-235.

Visalakshy, P.N.G. and Jayanth, K.P. 1990. Studies on the biology and seasonal abundance of *Hypena laceratalis* Walker (Lepidoptera: Noctuidae) on *Lantana camara* L. in India. *Entomon*, **15** (3-4): 231-234.