

## Record of Natural Enemies of *Heliothis armigera* from Coimbatore District, Tamil Nadu

P.R. SRINIVAS<sup>1</sup> and S. JAYARAJ<sup>2</sup>

Department of Entomology, Tamil Nadu Agricultural University, Coimbatore 641 003 India

There are several natural enemies of *Heliothis armigera* (Hbn.), which in the absence of pesticides, often maintain the pest populations below threshold levels. Thus there is a need to gather information on the natural enemy complex available in the ecosystem so as to determine the vacant niches. Survey was undertaken at fortnightly intervals during 1983-85 to record the natural enemies in *H. armigera* in Coimbatore district of Tamil Nadu where pulses were grown more commonly during 1983-85. Parasitised and healthy larvae of *H. armigera* in different stages were collected during the course of survey and reared in the laboratory until the emergence of

adults. The natural enemies emerged were preserved and identified by Commonwealth Institute of Entomology, United Kingdom.

During the survey it was observed that *H. armigera* was more prone to parasite attack during its early larval stages than the later stages (Table-1). Similar observations were recorded by Divakar and Pawar (1979) and Bilapate (1981). Twelve Hymenopteran and one Dipteran parasitoids and three predators were recorded from *H. armigera* collected from the different ecosystems.

**TABLE 1.** Record of natural enemies from different locations in Coimbatore district, Tamil Nadu

Natural Enemy	Family	Order	Season	Crop	Location
<i>Trichogramma</i> Sp.	Trichogrammatidae	Hymenoptera	October-December	Pigeonpea	9
			May-June	Greengram	8
<i>Agathis fabiae</i> Nixon	Braconidae	"	October-December	Pigeonpea	2
<i>Apanteles ruficrus</i> Haliday	"	"	November-January	Pigeonpea	4
			"	Lablab bean	4
<i>Bracon greeni</i> Ahmead	"	"	October-February	Lablab bean	2, 10
<i>Bracon hebetor</i> Say	"	"	October-February	Lablab bean	2, 9, 5, 7
			June-September	"	"
<i>Bracon</i> sp.	"	"	January-March	Lablab bean	5, 11
<i>Cryptosalius</i> sp.	"	"	October-March	Lablab bean	2, 12, 10
<i>Campoletis chloridae</i> Uchida	Ichneumonidae	"	November-January	Pigeonpea	2
<i>Enicospilus heliothidis</i> Vicreck	"	"	November-January	Lablab bean	10, 12
			October-January	Lablab bean	8
<i>Eriborus</i> sp.	"	"	September-December	Pigeonpea	2
			October-February	Chickpea	1, 2
			October-December	Lablab bean	2
			October-January	Pigeonpea	2, 3
<i>Leptobatopsis indica</i> Cameron	"	"	October-January	Lablab bean	2, 12
<i>Xanthopimpla</i> sp.	"	"	November-December	Pigeonpea	2
<i>Sarcophaga</i> sp.	Sarcophagidae	Diptera	November-January	Chickpea	2
			May-July	Cowpea	2
			October-January	Pigeonpea	3, 6
			October-February	Lablab bean	4
<i>Chrysoperla</i> sp.	Chrysopidae	Neuroptera	September-December	Lablab bean	7, 8
			March-April	Greengram	8
			October-December	Pigeonpea	2, 12
<i>Menochilus sexmaculatus</i> F.	coccinellidae	Coleoptera	October-December	Pigeonpea	2, 12
			October-January	Lablab bean	2, 5, 7
<i>Delta conoideum</i> Gmelium	Eumenidae	Hymenoptera	November-March	Lablab bean	2, 10, 12

\* Location (villages) of Coimbatore district

1. Annur Mettupalayam
2. Coimbatore
3. Kanvakarri
4. Kattampatti

5. Kuttagam
6. Pasur
7. Peddampatti
8. Periapatti

9. Sanaepatti
10. Thadagam
11. Thaneerpanthali
12. Thodamuthur

*H. armigera* eventhough, attacked by a large number of natural enemies, the establishment of effective natural enemies is needed. When the pest is considered by its economic importance, establishment of even a partially effective natural enemy against a particular stage could result in saving the losses and reducing the environmental pollution from insecticides. Sound economic thresholds are required for judicious chemical usage and the application techniques should allow for maximum predator and parasite survival.

#### ACKNOWLEDGEMENTS

The authors are grateful to Tamil Nadu Agricultural University for providing necessary

facilities and to Dr. B.R. Subba Rao, M.C.Day, A.D.Austin, K.M.Harris, I.M.White, S.J. Brooks and I.D.Gauld of Commonwealth Institute of Entomology, United Kingdom for identifying the specimens.

KEY WORDS: *Heliothis armigera*, parasitoids, predators, survey

#### REFERENCES

- Bilapate, G.G. 1981. Investigations on *Heliothis armigera* (Hubner) in Marathwada XIX : Field studies on larval and pupal parasites. *J. of Maharashtra Agric. univ.*, 6, 199- 202.
- Diwakar, B.J. and Pawar A.D. 1979. Natural enemy complex of *Heliothis* spp. (Lepidoptera : Noctuidae). *Plant Prot. Bull.*, 31, 112-117.