

RESEARCH NOTES

Parasitoid Complex of the Groundnut Leafminer, *Proaerema modicella* Deventer (Lepidoptera : Gelechiidae)

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The groundnut leafminer, *Proaerema modicella* Deventer, is a serious insect pest of groundnut in many South Asian and South-East Asian countries. In India, it has been reported in severe form on groundnut from Karnataka (Usman and Puttarudraiah, 1955), Andhra Pradesh (Krishnamurthy Rao *et al.*, (1962), Maharashtra and Tamil Nadu (Rai, 1976). The Leafminer however is attacked by many species of parasitoids in nature.

Mohammed (1981) from ICRISAT in his review has reported about 25 species of hymenopterous parasitoids attacking the eggs, larvae and pupae of *A. modicella*. Shetgur and Tombre (1984) recorded five larval parasitoids of leafminer from Parbhani (Maharashtra). Yadav *et al.* (1987) recorded four larval parasitoids of leafminer. Rajagopal *et al.* (1988) reported *Bracon gelechiae* Ashm. as larval parasitoid of leafminer from Bangalore. With a view to know the natural enemies of leafminer and to explore the possibilities of utilizing them as one of the components in pest management programme, a survey was carried out at the Regional Research Station, Raichur (Karnataka) during Kharif, 1989. The groundnut crop (JL-24 variety) was raised under totally unprotected condition. Infested leaf material was brought to the laboratory at weekly interval and observed for parasitization in *A. modicella*. A maximum of 66.22 and 90.57 per cent parasitization was observed during the third week of August and second week of September, respectively. The higher population of natural enemies synchronised with the maximum incidence of leafminer during the same period in this region. Parasitized larvae along with leaf material was caged separately

and observed for the emergence of parasitoids. The identity of the parasitoids was confirmed and the same is presented in Table 1.

A total of 16 species of hymenopterous parasitoids was collected on *A. modicella* during Kharif, 1989. Among them, the activity of three parasitoids viz., *Stenomesus japonicus* (Ashmead), *Sympiesis* sp. and *Tetrastichus* sp. were maximum during the month of August, while the occurrence of *Chelonus* sp. was more during the month of September.

Even though *A. modicella* has been attacked by a large number of natural enemies,

Table 1. Record of Hymenopterous parasitoids on *Proaerema modicella* Deventer in Raichur, Karnataka during Kharif, 1989

Family	Parasitoid sp.
Eulophidae	<i>Stenomesus japonicus</i> (Ashmead) <i>Sympiesis dolichogaster</i> Ashmead <i>Sympiesis</i> sp. <i>Tetrastichus</i> sp. <i>Elachertus</i> sp.
Pteromalidae	<i>Pteromalus</i> sp.
Eurytomidae	<i>Eurytoma</i> sp.
Eupelmidae	<i>Eupelmus</i> sp.
Chalcididae	<i>Brachymeria</i> sp.
Braconidae	<i>Avga choaspes</i> Nixon <i>Avga</i> sp. <i>Chelonus</i> sp. <i>Bracon gelechiae</i> Ashmead
Ichneumonidae	<i>Mesochorus</i> sp. <i>Temelucha</i> sp.
Bethylidae	<i>Goniozus stomopterycis</i> Ram and Subba Rao

the information on establishment and augmentation of effective natural enemies is needed. Further, these can be included as one of the components in integrated pest management programme and thus reduce environmental pollution. However, our knowledge regarding the parasitoid complex of *A. modicella* in this region may be incomplete and needs further investigations in the years to come.

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Key Words : Groundnut, *Aproaerema modicella*, parasitoids

REFERENCES

- KRISHNAMURTHY RAO, S., RAMACHANDRULU, P. and YESUDAR, T. 1962. Aerial spraying against surul poochi (*Stomopteryx nerteria*) on summer irrigated groundnut. *Andhra Agric. J.*, **9**, 202-206.
- MOHAMMED, A. 1981. A review of world literature on the groundnut leafminer, *Aproaerema modicella* Deventer (Lepidoptera : Gelechiidae). Occasional paper-3 of groundnut improvement programme, ICRISAT, Patancheru, Andhra Pradesh. p. 13-16.
- RAI, K. 1976. *Pests of oilseed crops in India and their control*. ICAR, New Delhi, p. 121.
- RAJAGOPAL, D., MALLIKARJUNAPPA, S. and JAVARE GOWDA, 1988. Occurrence of natural enemies of groundnut leafminer *Aproaerema modicella* Deventer (Lepidoptera : Gelechiidae). *J. Biol. Control.*, **2**, 129-130.
- SHETGAR, S.S. and THOMBRE, U.T. 1984. Occurrence of natural enemies on Soybean leafminer and relative susceptibility of some Soybean varieties to its attack. *J. Maharashtra Agric. Univ.*, **9**, 218-219.
- USMAN, S. and PUTTARUDRAIAH, M. 1955. A list of insects of Mysore including mites. *Dept. of Agric. Mysore State Entomol. Ser. Bull.*, **16**, 194.
- YADAV, D.N., PATEL, R.R. and PATEL, R.C. 1987. Natural enemies of groundnut leafminer, *Aproaerema modicella* Deventer (Lepidoptera : Gelechiidae) and their impact on its infestation at Anand. *Gujarat Agric. Univ. Res. J.*, **13**, 13-16.