

New records of natural enemies on insect pests of neem tree, *Azadirachta indica* A. Juss

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ABSTRACT: Ten natural enemies were observed to attack insect pests of neem tree, *Azadirachta indica* A. Juss in Tamil Nadu, India. Among them, coccinellids, *Jauravia pallidula* Motschulsky, *Chilocorus nigrita* (Fabr.); and spiders, *Platythomisus* sp. and *Cheiracanthium* sp. were found feeding on scale, *Parlatoria orientalis* Rao and mealybug, *Pseudococcus gilbertensis* Beardsley. The thrips, *Podothrips* sp. was found to be predacious on the scale, *Parlatoria orientalis* Rao. Spider, *Olios* sp. was found to attack ash weevil, *Myloccerus viridanus* (Fabr.). The braconids, *Apanteles macchaeralis* Wilkinson and *Fornicia* sp. were found to parasitize the leafwebber, *Loboschiza koenigiana* Fabr. and the slug caterpillar, *Aphendala cana* (Walker). The egg parasitoid, *Anastatus* sp. was observed parasitizing eggs of bark bug, *Halys dentata* Fabricius. All the above mentioned natural enemies were recorded for the first time in the neem ecosystem.

KEY WORDS: *Azadirachta indica*, insect pests, natural enemies

The neem, *Azadirachta indica* A. Juss is a versatile tree and its products are used as botanical insecticides against various insect pests in agriculture, veterinary and public health. However, the neem tree is itself subjected to the attack of several insect pests (Schmutterer, 1990). With a view to develop biocontrol strategy for insect pests of neem, attempts were made to record their natural enemies.

Survey studies were made to record the natural enemies of the insect pests of neem trees at Agricultural College and Research Institute, Killikulam, Tamil Nadu. Observations were made at weekly interval on 25 neem trees (age above six years) and on 200 seedlings in the nursery. The specimens collected were got identified from International Institute of Entomology, London; Zoological Survey of India,

Calcutta; and Entomology Research Institute, Loyola College, Chennai.

Ten species of natural enemies *viz.*, six predators, three parasitoids and one pathogen were found attacking insect pests of neem (Table 1). The major natural enemy in the neem ecosystem was *Jauravia pallidula* Mots. which was found to feed on the scale, *Parlatoria orientalis* Rao and the mealybug, *Pseudococcus gilbertensis* Beardsley. Other predators found on *P. orientalis* were *Chilocorus nigrita* (Fabr.), *Platythomisus* sp. and *Cheiracanthium* sp.

The spider, *Olios* sp. was found predating on the ash weevil, *Mylloceris viridanus* (Fabr.). The eggs of the bark bug, *Halys dentata* Fabr. were parasitized by an eupelmid parasitoid, *Anastatus* sp. The parasitization of the eggs of *Anastatus ramakrishnae* was earlier reported by Velayudhan *et al.* (1988). The occurrence of the parasitoid was not so common.

Further studies are required to be conducted on the biology, feeding potential and rearing techniques of some promising natural enemies.

Table 1. Natural enemies of insect pests of neem tree

Natural enemy	Order: Family	Host	Occurrence
A. Predator			
<i>Chilocorus nigrita</i> (Fabr.)	Coleoptera: Coccinellidae	<i>Pseudococcus gilbertensis</i> Beard. <i>Parlatoria orientalis</i> Rao	April- May
<i>Jauravia pallidula</i> Mots.	Coleoptera: Coccinellidae	<i>Pseudococcus gilbertensis</i> Beard. <i>Parlatoria orientalis</i> Rao	Throughout the year
<i>Podothrips</i> sp.	Thysanoptera: Phleothripidae	<i>Pseudococcus gilbertensis</i> Beard. <i>Parlatoria orientalis</i> Rao	April- June
<i>Cheiracanthium</i> sp.	Araneae: Clubionidae	<i>Parlatoria orientalis</i> Rao	March-Nov.
<i>Platythomisus</i> sp.	Araneae: Thomsidae	<i>Parlatoria orientalis</i> Rao	Throughout the year
<i>Olios</i> sp.	Araneae: Heteropodidae	<i>Mylloceris viridanus</i> (Fabr.)	Throughout the year
B. Parasitoid			
<i>Anastatus</i> sp.	Hymenoptera: Eupelmidae	<i>Halys dentata</i> (Fabr.)	July-September
<i>Apanteles machaeralis</i> Wilkinson	Hymenoptera: Braconidae	<i>Loboschiza koenigiana</i> (Fabr.)	October-March
<i>Fornicia</i> sp.	Hymenoptera: Braconidae	<i>Aphendala cana</i> Walk.	April- June
C. Pathogen			
	Eurotiales: Eurotaceae	<i>Helopeltis antonii</i> (Sign.)	November-January

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