International Journal of Farm Sciences **6(2)** : 187-190, 2016

Short communication

Identification of some parasitoids in West Godavari district, Andhra Pradesh

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ABSTRACT

Different stages of insects were collected from farmers' fields during field visits and reared in the laboratory to know the natural parasitisation. Natural enemies viz *Apanteles taragamae* Viereck as a gregarious larval parasitoid of pumpkin leaf caterpillar, *Diaphania indica* (Saunders), *Metopius browni* Ashmead from pupa of *Spodoptera litura* (Fabricius), *Apanteles stantoni* Ashmead as a larval parasitoid of *Tabarnaemontana crassa* leaf webber, *Parotis vertumnalis* Guenee, *Apanteles phycodis* Viereck as larval parasitoid of ficus leaf webber, *Phycodes radiata* (Ochsenheimer), *Telenomus* sp as an egg nymphal parasitoid of bug, *Coptosoma cribraria* (Fabricius), *Goniozus* sp from sapota fruit borer, *Anarsia achrasella* (Latreille), *Apanteles* sp from amaranthus caterpillar, *Hymenia recurvalis* (Fabricius), *Brachymeria* sp a larval parasitoid of cabbage leaf webber, *Crocidolomia binotalis* (Zeller), *Cotesia* sp as a larval parasitoid of leaf webber, *Syngamia abruptalis* Walker were recorded.

Keywords: Natural enemies; pest; parasitoid; insect

INTRODUCTION

Biological control is an environmentally sound and effective means of reducing or mitigating pests and pest effects through the use of natural enemies. In nature, parasitoids and predators attack various life stages of insects. Identification, conservation and augmentation of these natural enemies can provide a good control of insect pests. Identification of natural enemies is mandatory since potential parasites if any can be selected for use in integrated pest management (IPM) programme. In the present study efforts were made to explore parasitoids attacking pests in different crop ecosystems in West Godavari district, Andhra Pradesh.

MATERIAL and METHODS

The study was carried out in West Godavari district, Andhra Pradesh during 2012-2013 to document the parasitoids of different pests. The district is geographically situated in 16.9ºN latitude and 81.3ºE longitude at an altitude of 34 m (112 feet) amsl. The location falls under

agro-climatic zone 10, humid, east coast plain and hills (Krishna-Godavari zone) with an average rainfall of 1076 mm. It experiences hot humid summers and mild winters.

Different stages of insect pests were collected during field visits. They were brought to the laboratory, reared in separate containers and fed with their respective natural diet. They were observed for the emergence of parasitoids if any which were got identified from National Bureau of Agriculturally Important Insects (NBAII), Bengaluru, Karnataka, India.

RESULTS and DISCUSSION

Apanteles taragamae Viereck was recorded as a major parasite of the pumpkin caterpillar, *Diaphania indica* (Saunders) (Lepidoptera: Pyralidae) from fields of spine gourd, bitter gourd, snake gourd and *Coccinea*. In *Coccinea* field where insecticides application was less, >80 per cent parasitisation by *A taragamae* was observed. Dannon et al (2012) reported that *A taragamae* is a potential biological control agent for cowpea pod borer, *Maruca vitrata* Fabricius and can be used in classical biological control. It is also an egg larval parasitoid of *Opisina arenosella* (Mohan and Sathiamma 2007).

Spodoptera litura Fabricius larvae were collected from castor leaves and reared to know the parasitoid emergence. From the pupated larvae, *Metopius browni* Ashmead adult emergence was observed. *M discolor* is reported as a parasitoid of *S littoralis* (Streito and Nibouche 1997).

Apanteles stantoni Ashmead was recorded as a larval parasitoid of *Tabarnaemontana crassa* leaf webber, *Parotis vertumnalis* Guenee. Krishnamoorthy et al (2004) reported *Dolichogenidea (=Apanteles) stantoni* as a larval parasitoid of pumpkin caterpillar, *Diaphania indica* from Karnataka, India.

Apanteles phycodis Viereck was identified as larval parasitoid of ficus leaf webber, *Phycodes radiata* (Ochsenheimer). Ankita et al (2012) also reported the distribution of *A phycodis* in India.

Eggs of bugs, *Coptosoma cribraria* (Fabricius) from black gram field were found to be infested with *Telenomus* sp. The emergence of the parasitoid was observed in 1st instar nymphal stage (egg nymphal parasitoid). *Telenomus* sp is considered as an important egg parasitoid of Pentatomid bugs (Mugo and Ndoiru 1997).

Parasitoid, *Goniozus* sp emerged from larvae of sapota fruit borer, *Anarsia achrasella* (Latreille). *Goniozus* sp is reported as a larval parasitoid of cotton bollworm, *Pectinophora gossypiella*

(Sekhon and Varma 1983). *G nephantidis* is used in biological control of coconut black headed caterpillar, *Opisina arenosella* (Sujatha and Chalam 2009, Venkatesan et al 2009).

Apanteles sp was identified as a gregarious larval parasitoid of amaranthus caterpillar, *Hymenia recurvalis* (Fabricius). Narayanan et al (1957), Kedar and Kumaranag (2013) also reported the parasitisation of *H recurvalis* by *Apanteles* sp.

Brachymeria sp was identified as a larval parasitoid of cabbage leaf webber, *Crocidolomia binotalis* (Zeller). Kalidas and Saravanan (2013) reported *Brachymeria* sp as a parasitoid of oilpalm leaf webber from West Godavari district of Andhra Pradesh. Saucke et al (2000) observed the presence of *B phya* (Walker) in cabbage ecosystem infesting *Plutella xylostella*.

Syngamia abruptalis Walker is a major pest of mint (Sagar and Reddy 1987) and sweet basil (Tigvattnanont1990). *Cotesia* sp was recorded as a larval parasitoid of *S abruptalis* in betelvine ecosystem. Sireesha et al (2009) reported the presence of *Cotesia* sp in betelvine ecosystem in Andhra Pradesh.

The amenability of rearing of these parasitoids in the laboratory and their potential for suppression of insect pests has to be studied for successful suppression of insect pests which is safe, economical and perpetual in nature for controlling insect pests as a major component of IPM.

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Received: 10.4.2015 ***Accepted: 19.11.2015***