Short Communication

SEASONAL INCIDENCE OF MEALY BUG SPECIES AND THEIR MAJOR PARASITOIDS ON COTTON (*GOSSYPIUM SP.* L.) IN COIMBATORE, TAMIL NADU

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ABSTRACT

Field experiment on seasonal incidence of mealy bug species of cotton was conducted in Coimbatore, Tamil Nadu Agricultural University during 2016-2017. Results showed four mealy bug species such as *Phenacoccus solenopsis* (Tinsley), *Maconellicoccus hirsutus* (Green), *Ferrisia virgata* (Cockerell) and *Paracoccus marginatus* (Williams & Granara de Willink). Among them, peak population of *Phenacoccus solenopsis* (400.75 insects/plant) was recorded in October, that decreased slowly during January (100.6 insects/plant) and there was least population during February - March. Correlation analysis between weather parameters and mealy bug activity indicated positive correlation with maximum temperature, minimum temperature, relative humidity and negative correlation with rainy days. The major parasitoids found attacking mealybugs in the experimental field were; *Aenasius arizonensis* Girault, *Promuscidea unfasciati* Girault and *Acerophagus papayae* Noyes & Schauff. The assessment of mealybug population and the level of parasitization of the three parasitoids were carried out based on the adult emergence from the sampled parasitized mealybugs. The parasitism of mealy bug by *Aenasius arizonensis* was the highest in October which decreased gradually during January with the decrease in mealy bug population.

INTRODUCTION

Cotton, the most important natural textile fibre of the world, acclaimed as "the king of fibres or white gold" occupies a prominent place in the Indian economy, providing livelihood to millions of people as well as serving as the basic raw material for the textile industry (Gupta, 2001).Though a motley of mealy bug species attack cotton, the cotton mealybug, *Phenacoccus solenopsis* (Tinsley) (Pseudococcidae: Hemiptera) is a pest of recent origin that threatens the cultivation of cotton , causing extensive yield losses and it has ability to infest several agricultural, horticultural and forestry crops.

MATERIALS AND METHODS

Field experiment on seasonal incidence of mealy bug species and their major parasitoids of cotton was conducted in Coimbatore, Tamil Nadu Agricultural University during 2016-2017. MCU5 cotton cultivar was raised and kept free from pesticide application. In order to study the diversity of mealybug species and their major parasitoids, weekly observations were recorded from early stage to till the harvest of crop. Number of mealybug and its natural enemies were recorded from five randomly selected plants. In the case of mealy bugs, the number of insects on top 5 cm of infested twig was enumerated with a hand lens (10X). In the case of parasitoids, mealy bug samples on which adults of parasitoids were observed in field were brought to lab and maintained for adult emergence. Based on taxonomic characters, three parasitoids, *Aenasius arizonensis*, *Promuscidea unfasciati* and *Acerophagus papayae* were identified and enumerated. The data obtained from experiment were subjected to correlation analysis (Gomez and Gomez, 1984) for inferences.

RESULTS AND DISCUSSION

Studies on seasonal incidence of mealybugs indicated that maximum population of *P. solenopsis* was observed during October (400.75 insects/plant) and decreased during January (100.6 insects/plant) and there was least population

in February- March. High temperature and low relative humidity that prevailed during October might be conducive for buildup. However, Suresh and Chandrakavitha (2008) reported that the population of *P. solenopsis* varied from 0-20 insects per 5 cm twig with a peak population during April- May in cotton and there was no incidence from June to November. Three encyrtid parasitoids, *Aenasius arizonensis*, *Promuscidea unfasciati* and *Acerophagus papayae* were identified and enumerated. Among them, *A. arizonensis* was numerically superior than others.

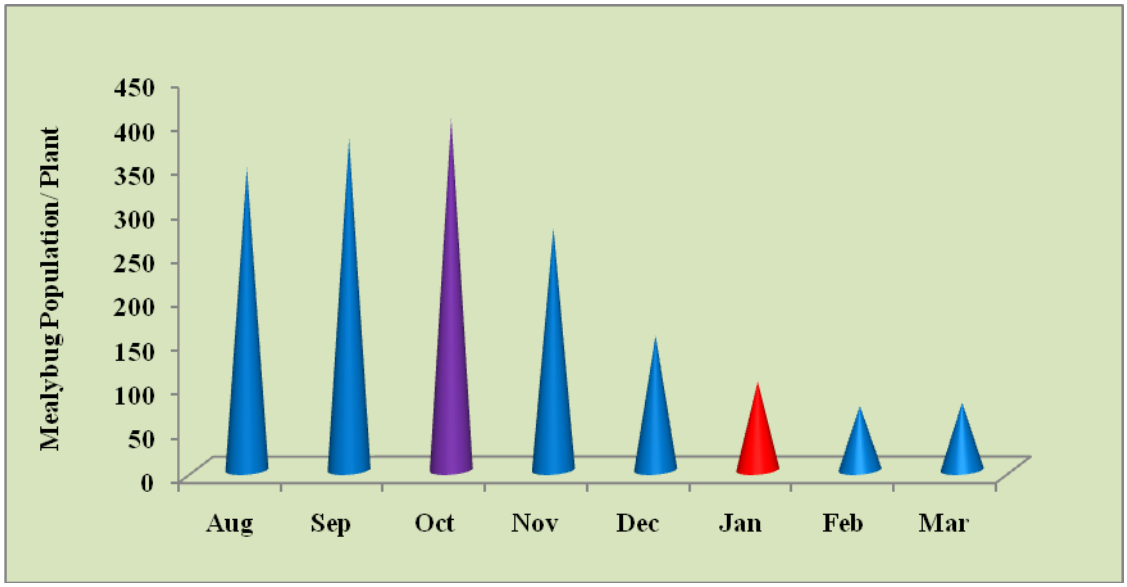

Fig. 1. Population abundance of mealybug species in cotton ecosystem during 2016 – 2017

REFERENCES

Gupta, G.P. 2001. Alternate strategies for IPM in major crops. ICAR - IARI, New Delhi, June 11 – July 5: 232-236.

Gomez, R.A. and A.A., Gomez, 1984. Statistical Procedures for Agricultural Research. Inter Science Publications, John Wiley and Sons, IRRI, The Philippines. 680p.

Suresh, S. and P. Chandrakavitha. 2008. Seasonal incidence of economically important coccid pests in Tamil Nadu. In: *Proceedings of the XI International Symposium on Scale Insect Studies*, Oeiras, Portugal, 24-27th Sept. 2007.

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