

## OCCURRENCE OF *HOLOTRICHIA SERRATA* (SCARABAEIDAE: MELOLONTHINAE) IN VIDARBHA

Soybean (*Glycine max* (L.) Merrill) is an important crop in Vidarbha region of Maharashtra. White grub is polyphagous pest and earlier it was recorded in groundnut and sugarcane Maharashtra. *Holotrichia serrata* (Fabricius) was earlier recorded in southern states viz. Tamil Nadu, Karnataka, Kerala, Andhra Pradesh (Veeresh, 1977). Grubs damage practically all type of crops. But their damage to tap root, specially the leguminous one, is more serious. They eat away the nodules and the plant suffers from proper nitrogen supply. So far as soybean is concerned three species viz. *Holotrichia lanceolata* Say, *Lachnosterna* (*Holotrichia*) *diomphalia* Bats, and *L. (Holotrichia) morosa* Waterh had been known. In India serious attack of *Holotrichia consanguinea* Blanchard had been reported from Amravati region of Maharashtra and to a slightly lesser extent at Delhi by Bhattacharjee and Bhatia (1980). The present study reports on the *H. serrata* in soybean and pigeon pea ecosystem from Amravati region of Maharashtra in addition to *Holotrichia consanguinea* Blanchard reported earlier.

Hudi village is a part of western Vidarbha zone, which is situated at 19.52° N 77.37° E and 1033 ft >msl. It is located in Pusad taluka of Yeotmal district in Maharashtra. A location specific outbreak was noticed in soybean and cotton + pigeon pea intercropping ecosystems during September 2012.

Non replicated trial was laid out and 10 plots of 1 m<sup>2</sup> size were observed for grub population. Cotton crop and pigeon pea cultivated following intercropping system with 8:1 rows respectively, was used. Both the field (soybean and cotton + pigeon pea) were adjacent to each other in one consolidated block of 5 ha. area with approximately 10 m distance between each other. Morphometry was done for 3<sup>rd</sup> instar grub, pupae and adult stages collected from field and reared in the laboratory.

Soybean was found heavily infested by white grubs, with wilting symptoms and the infested plants were easily pulled out with damaged root system.

Upon uprooting second and third instar grubs were found. Adjacent pigeon pea crop was also moderately damaged cotton was not so affected.

The fully grown grub was dirty white. Head with strong mandibles and brown with antenna long slender. Legs well developed, similar and with setae. One pair of spiracle located on the prothoracic region and eight in the abdominal region. The size (length) ranged from 34 mm to 39 mm. (36.4±1.44) and width 10 to 12 mm. (11.2±0.83mm). Bhawane et al. (2011) reported that it ranged from 30-35 mm. length and width from 5-9 mm. Instar lasted for 60 to 70 days, while Mujumdar and Teotia (1965) reported 81 days. A short prepupal period (2 days) was observed which prepared an earthen chamber.

The full grown larva burrowed deep (25-30cm) into the soil in pot and stopped feeding, and prepared a small earthen cell and pupated within earthen cell. The pupa were exarate and measured 25 to 27 mm length (25.8±0.83mm) and 11 to 12 mm width (11.4± 0.54 mm). Bhawane et al. (2011) reported that length ranged from 15-18 mm and width from 6-8 mm. The pupal period lasted for 13 to 19 days.

The adults were brownish with female larger than males and measured 23 to 25 mm in length (23.8±0.83) and 12 to 14 mm width (13.2±0.83mm). Bhawane et al. (2011) reported that it ranged from 18-21 mm in length and 7-10 mm. Adults survived for 12 to 26 days under the laboratory conditions.

Thus, it is inferred that *H. serrata* (F.) is the most predominant and notorious white grub of Vidarbha region. As location specific outbreak was noticed in the Yeotmal district of Vidarbha in soybean this pest has attracted attention of the researchers.

### REFERENCES

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## INVASION OF PAPAYA MEALY BUG, *PARACOCCUS MARGINATUS* IN ASSAM

Papaya Mealy Bug (PMB), *Paracoccus marginatus* Williams and Granara de Willink (Insecta: Hemiptera: Pseudococcidae) is a typical polyphagous insect. It was discovered in Manatee and Palm Beach counties in Florida in 1998 and had been recorded on more than 55 host plants in more than 25 genera which include economically important crops like papaya, hibiscus, avocado, citrus, cotton, tomato, eggplant, peppers, beans, peas, sweet potato, mango, cherry and pomegranate ([http://entnemdept.ufl.edu/creatures/fruit/mealybugs/papaya\\_mealybug.htm](http://entnemdept.ufl.edu/creatures/fruit/mealybugs/papaya_mealybug.htm)). It made its entry to our country through Sri Lanka and was first detected in papaya breeding block of Tamil Nadu Agricultural University during July, 2008 (Shylesha *et. al.* 2010). In South Indian States, PMB has caused an extensive loss to a tune of several crores infesting papaya crop alone during last few years.

Hence a preliminary survey was made in Dibrugarh district by news/awareness message through All India Radio, Doordarshan, Kishan Mobile Advisory Service and with the help of extension functionaries of District Agriculture Office, Dibrugarh. Survey was also conducted in various locations while visiting different villages during trainings, demonstrations, field-visits, diagnostic-visits and other mandatory activities made by KVK, Dibrugarh time to time. In each case, feedback from farmers was received through personal contact or telephone as per the record maintained in KVK. Preliminary questions were asked to farmers to know the time of entry and existence of the pest and subsequent field-visits were made as per the need, especially, if the attack was reported to be severe or farmers were not found well aware about the pest and/or its damage. The rainfall data were taken from the Automatic Weather Station (AWS) of KVK, Dibrugarh.

These revealed that papaya plants have been attacked by Papaya Mealy Bug for the first time in Dibrugarh district of Assam and got identified as *Paracoccus marginatus*. The first infestation of *P. marginatus* was noticed during winter of 2012. The infestation started increasing with the onset of dry spell during the winter months and some plants, more particularly the plants which were attacked during March-April, could recover from damage even after complete defoliation on receiving the pre-monsoon shower (Table 1).

Based on the survey the present status of the pest can be summarised as:

- This exotic pest has invaded the district presumably through infested papaya fruits imported from south India, since such papaya is available in the Dibrugarh market.
- Till date, the pest is restricted to urban/ peri-urban area only. No infestation has so far been found in remote villages.
- In the surveyed area, most of the infested papaya plants died within 6-8 weeks. Fall of leaves, fruits and other aerial parts was noticed remaining only the erect stem. Plants infested during dry period died earlier than that in rainy days. Some papaya plants had recovered from the attack and started foliating from the complete-defoliated stage after receiving pre-monsoon shower. Heavy pre-monsoon rainfall washed away the mealy bugs before any considerable damage to stem of these recovered plants. However, fruits were damaged completely in such plants too.
- No native predator or parasites have, so far, been noticed associated with the pest.