



## SHORT NOTE

# Host range of invasive Jack Beardsley mealybug, *Pseudococcus jackbeardsleyi* Gimpel and Miller in Karnataka

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The movement of invasive mealybugs (Hemiptera: Pseudococcidae) which are major pests of a wide range of agricultural, horticultural and ornamental plants worldwide has been documented by Muniappan (2011). As envisaged in the paper after the invasion of papaya mealybug, and *Phenacoccus madeirensis* (Madeira mealybug), the Jack Beardsley mealybug was recorded in India (Shylesha and Joshi, 2011, Mani *et al.*, 2012). Certain attributes of the Pseudococcidae, *viz.*, wide host range, short generation time, cosmopolitan nature, ability to transmit some important plant viruses, etc., have contributed to their enormous damage potential (Meyer *et al.*, 2008). In this regard, *Pseudococcus jackbeardsleyi* Gimpel and Miller (Hemiptera: Pseudococcidae), known as the Jack Beardsley mealybug, a polyphagous species of neotropical origin commonly occurring in Caribbean and Central and South America, that is known to attack 93 plant species including several vegetable and fruit and ornamental crop species (CAB Intl., 2001) has entered India infesting several of crop plants. The invasive mealybug is greyish in colour; thin filaments around the body, caudal pair about one half of the length of the body, and ovisac covering hind part of the body (Williams 2004a). The presence of ovisac differentiates it from *Pseudococcus longispinus* (Targioni Tozzetti). Morphological details of the *P. jackbeardsleyi* occurring in India are given by Mani *et al.*, (2012).

Survey for invasive insects in southern parts of India revealed the occurrence of *P. jackbeardsleyi* in Tamil Nadu, and Karnataka. It was found associated with papaya mealybug on papaya (Fig.1) at Ravindranath Tagore Nagar in Bangalore. Other plants in the area like *Cordyline terminalis* (Agavaceae), an ornamental plant native to Southeast Asia, Australia, New Zealand was found to harbour *P. jackbeardsleyi*. The nymphs were found scattered on the leaves singly, similarly it was found on flowers of custard apple (*Annona squamosa*), Purple martin (*Streptocarpus* sp.) Jasmine (*Jasminum multiflorum*) in pure form (Fig. 3 and 4). Along with

papaya mealybug, *Paracoccus marginatus*, it was found in papaya, tapioca, chrysanthemum and Indian spinach (*Basella alba*) (Fig. 3 and 4). It is associated with *P. solenopsis* on parthenium and chrysanthemum. In some crops it was associated with aphids and spiralling whiteflies as in case of basil, chrysanthemum (Fig. 2) and jasmine. The Jack Beardsley mealybug is distributed throughout the Neotropical region and a few countries in southern Asia (Williams and Watson, 1988).

Jack Beardsley mealybug is a polyphagous species known to attack 93 plant species including several vegetable and fruit and ornamental crop species (CAB Intl., 2001). United States quarantine department recorded on a wide diversity of hosts from annuals such as peppers, eggplant, and tomatoes to many tropical fruit trees, and tropical shrubs, and ornamentals. It has been recorded on more than 35 host plant families at quarantine

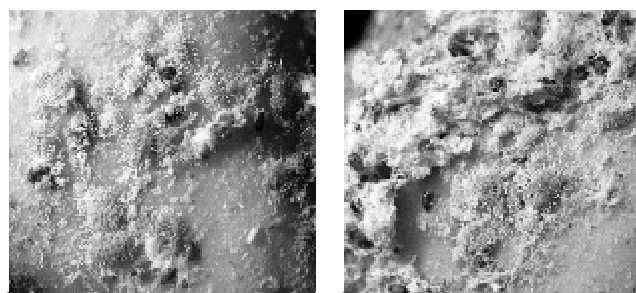


Fig. 1. *P. jackbeardsleyi* on papaya and along with *P. marginatus*

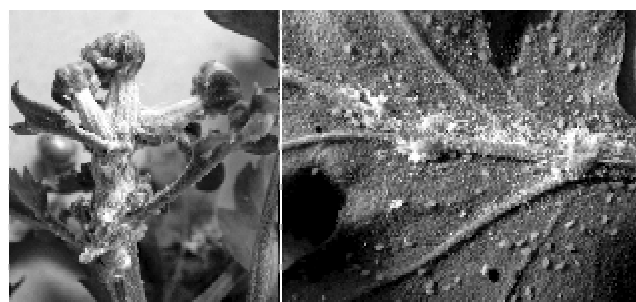
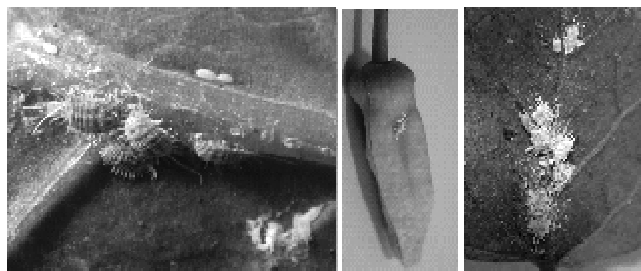
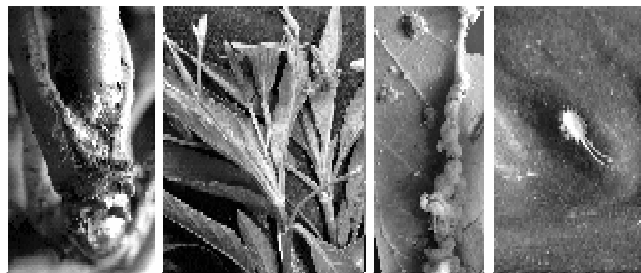


Fig. 2. *P. jackbeardsleyi* on chrysanthemum along with *P. solenopsis* and aphids



**Fig. 3.** *P. jackbeardsleyi* on *Basella alba*, *Annona* flower and jasmine



**Fig. 4.** *P. jackbeardsleyi* on *Streptocarpus* sp. (purple martin), tapioca and *Cordyline* sp. plants

interceptions at US ports. Importation consignments of fresh potatoes from Mexico were found to contain *P. jackbeardsleyi* (USDAAPHIS, 2003). As many as 22 plant species have been reported as hosts of *P. jackbeardsleyi* in Asian countries (Williams, 2004a, b) including banana, *Aglaonema*, *Dieffenbachia*, tomato, potato, pepper, *Hibiscus*, *Anthurium*, orchids, floral ginger, *Annona*, *Dracaena*, and ivy gourd. It was originally identified as the banana mealybug in Hawaii (Beardsley, 1986).

Ever since the first report of this invasive mealybug, the host range is expanding day by day in India. Several of the host plants of *P. jackbeardsleyi* are economically important. As in case of the other invasive species observed viz., *P. solenopsis* and *P. marginatus*, in the beginning the establishment was on weeds and ornamental crops was fast and co existence with several other sucking pests was observed. This invasive mealybug is a very slow establishing species and is expanding slowly. Some of the local natural enemies like *Cryptolaemus montrouzieri*, *Spalgis epius* and some species of gnats are keeping the spread under check.

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