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Short communication

First record of lantana mealybug, *Phenacoccus parvus* Morrison (Hemiptera: Pseudococcidae), as a pest on China aster from South India

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ABSTRACT

Heavy population of lantana mealybug, *Phenacoccus parvus* Morrison, was recorded on China aster, *Callistephus chinensis* (L.) Nees, in pest proportions at Bangalore, South India, both on the collar region and roots. About 25% of the plants were infested by the mealybug. Infested plants showed stunted growth and did not bear flowers seen in healthy plants. Field and mounted characters of *P. parvus* are presented in the paper.

Key words : China aster, lantana mealybug, *Phenacoccus parvus*

China aster, *Callistephus chinenesis* (L.) Nees (Asteraceae), is one of the important annual flower crops in India and ranks next only to chrysanthemum and marigold in commercial cultivation. In recent years, China aster has gained more popularity due to its multifarious uses, including cut-flower purposes. The flowers fetch a very good price to the farmers when production coincides with market demand. It is commercially grown in Karnataka, Tamil Nadu, Andhra Pradesh, Maharashtra and West Bengal. In peri-urban surroundings of Bangalore (Karnataka) and Pune (Maharashtra) alone, it is being grown in an area of 500 and 400 ha, respectively (Reddy, 2009).

Several insect pests infest China aster causing economic damage to the crop. Among insect pests recorded on China aster in India, the leaf miner, *Liriomyza compositella* Spencer, the termite, *Microtermes obesi* (Holmgren), the pterophorid, *Platyptilia molopias* Meyrick, the noctuid, *Ctenoplusia albostriata* (Bremer & Grey), the chrysomelid, *Aulacophora foveicollis* (Lucas) and a phycitid were major pests affecting flower yield and seed production (Udayagiri, 1985, 1987). Reddy (2009) listed various management options for control of major pests of China aster under the Indian conditions.

During the regular surveys we undertake for pests of ornamental crops at the Indian Institute of Horticultural Research, Bangalore, incidence of lantana mealybug, *Phenacoccus parvus* Morrison (Hemiptera: Pseudococcidae), was observed on China aster, infesting mainly the subterranean parts. *Phenacoccus parvus* is South American in origin but has extended its range to Africa, tropical Pacific region, Australia, Southern Asia and China (Anonymous, 1990). The pest has been recorded on more than 50 species of plants belonging to 26 families (Ben-Dov, 2005). Jennifer (1994) listed several host plants of *P. parvus* belonging to 19 different families from India, the Pacific and Caribbean islands, Central and South America, West Africa, South-East Asia, the Cook and Maldive Islands and Australia. The principal host plant of *P. parvus* is *Lantana camara* L. (Verbenaceae). The mealybug was first thought to be a good biocontrol agent for *Lantana camara* in Queensland, Australia. Biology of *P. parvus* has been extensively studied on lantana. Adults feed on the underside of leaves and on green stems. Eggs are laid on the underside of fully expanded, mature leaves. Crawlers cluster along leaf veins. Development from egg to adult takes about 26 days. Adults live for about three months.

In the present study, heavy population of mealybug, *P. parvus*, was recorded both at the collar region and on subterranean plant parts of China aster. The mealybug was recorded during August-September 2010 on cv. *Kamini* of China aster, in the field of Indian Institute of Horticultural Research, Bangalore (12°58' N; 77°35' E and altitude 890 m above MSL). About 25% of the plants were infested by this mealybug and infested plants were stunted in growth and did not bear flowers as did the healthy plants of the same age. When uprooted, all the stunted plants in the field

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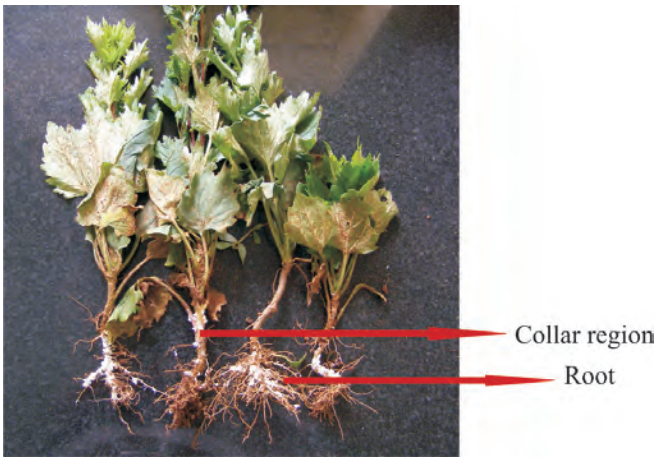

Fig 1. China aster plants infested with *Planacoccus parvus*

were observed to be infested with the mealybug on their root system, in turn, affecting growth of the plant further (Fig. 1). The mealybug was mounted on a slide and its characters were studied as per McKenzie (1967).

Field characters: Body oval to elongate, dorso-ventrally flattened; body light yellow, covered with thin, white wax powder; body without any naked areas. However, horizontal segmental lines darker than the wax-dusted inter-segmental area; legs light yellowish-brown; body periphery with small, wax filaments of uniform size numbering 17-18; ovisac elongate on lower side of the female; occurring on roots and collar region of the host.

Mounted mealybug characters: Antenna nine segmented; Legs well-developed, reaching beyond body margin, with claw having denticle. Translucent pores on hind tibia seen only in a few specimens. Circulus small, oval, between 3rd and 4th abdominal segment. Cerari 18 in numbers, raised from derm, giving body margin a wavy appearance. Each cerari with two lanceolate setae. Some cerari on head with three setae. Dorsal setae short, lanceolate and often associated with trilocular pores. Trilocular pores present both on dorsum and venter; however, multilocular disc pores present only on venter of abdomen. Very few quinquelocular pores present between hind and middle legs on venter. Aggregation of oral tubular ducts between 12th and 13th cerari (when counted from anal lobe cerari upwards).

Combination of field and mounted characters led to confirmation of the species as *Phenacoccus parvus*. This is the first record of *P. parvus* on roots of China aster in pest proportions. Williams (2004), while providing synopsis of the subterranean mealybugs, mentioned this species of *Phenacoccus* as infesting roots of its hosts. In India, it has been recorded from Orissa on *Chrysanthemum* sp. (Asteraceae), *Capsicum annuum* L. (Solanaceae), *Amaranthus* sp. (Amaranthaceae) and *Lycopersicon esculentum* Mill. (Solanaceae). Keeping in view the incidence of *P. parvus* in pest proportions and its subterranean feeding habit on China aster, there is an urgent need to exercise management options before its occurrence reaches alarming proportions.

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