

First report of invasive mealybug *Phenacoccus solenopsis* Tinsley infesting cashew from Goa, India

R. Maruthadurai · N. P. Singh

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Abstract The solenopsis mealybug *Phenacoccus solenopsis* Tinsley (Hemiptera: Pseudococcidae) has emerged as an aggressive pest on a wide range of host plants in many countries. Mealybug demes were found on young tender leaves, twigs, inflorescence panicles and fruit peduncles of cashew *Anacardium occidentale* L. (Family: Anacardiaceae). Drying and curling of inflorescences, tender leaves and twigs were observed due to sucking of sap or saliva injection by nymphs and adults of mealybugs. The mealybugs were identified as *Phenacoccus solenopsis* Tinsley. The peak infestation of 20.73 mealybugs/ 5 cm twig was recorded in the months of April and May during 2012. The endoparasitoid *Aenasius bambawalei* Hayat (Hymenoptera: Encyrtidae) was also recorded from mummies of *P. solenopsis*. This is the first report of *P. solenopsis* infestation on cashew, which may emerge as a sporadic pest of *A. occidentale* in India.

Keywords *Aenasius bambawalei* · *Anacardium occidentale* · Biology · Cotton mealybug · Damage · Host plants · Parasitoid

Cashew (*Anacardium occidentale* L., Family: Anacardiaceae) is one of the important commercial plantation crops in India. It plays a crucial role in terms of

foreign exchange earnings through the export of kernels (Venkatesh 2012). It was originally introduced into India from Brazil by Portuguese travelers during the 16th Century for checking soil erosion on the coast. Cashew is now widely grown in tropical climates and it is very well adapted to the Indian conditions (Bhat *et al.* 2010). Insect infestation is a major constraint in cashew production and more than 50 species of insects infest cashew in India (Pillai *et al.* 1976), the major ones being stem and root borers and the tea mosquito bug. However, recently the minor pests have attained a major status due to a change in the climate and are causing severe yield losses. The invasive mealybug *Phenacoccus solenopsis* Tinsley (Hemiptera: Pseudococcidae) is one of them. It has a wide geographical distribution and was first recorded on cotton in the USA (Fuchus *et al.* 1991). In India, it has been recorded as a serious pest on cotton and is widespread throughout cotton-growing states of the country, viz., Punjab, Haryana, Rajasthan, Gujarat, Madhya Pradesh, Maharashtra, Andhra Pradesh, Karnataka and Tamil Nadu (Nagrare *et al.* 2009). It has also been reported as a serious pest on cotton in Pakistan (Hodgson *et al.* 2008) and in China (Wang *et al.* 2009). So far this insect has been reported on 183 plant species belonging to 52 families in the USA (Ben-Dov *et al.* 2009). It has 154 host species including 64 weeds from 53 families in Pakistan (Arif *et al.* 2009). The insect is known in 194 host species including 108 weeds from 50 families in India (Vennila *et al.* 2011). However, no infestation of *P. solenopsis* was previously recorded on cashew. This is the first report of *P. solenopsis* Tinsley, infesting cashew from Bicholium taluk of Goa, India. Parasitism of

R. Maruthadurai (✉) · N. P. Singh
ICAR Research Complex for Goa, Ela, Old Goa,
Goa 403 402, India
e-mail: durai_uas@rediffmail.com