



## Research Note

# Natural colonization of Australian ladybird beetle, *Cryptolaemus montrouzieri* Mulsant in papaya plantation infested with *Paracoccus marginatus* Williams and Granara de Willink in Tamil Nadu

**M. KALAYANASUNDARAM, M. MANI\* and C. SHIVARAJU\***

Department of Agricultural Entomology, Tamil Nadu Agricultural University, Coimbatore 641 003

Division of Entomology and Nematology, Indian Institute of Horticultural Research, Bangalore 560 089

Corresponding author E-mail: mmani1949@yahoo.co.in

**ABSTRACT:** The role of *Cryptolaemus montrouzieri* as an effective predator of *Paracoccus marginatus* Williams and Granara de Willink was often doubtful. Natural colonisation of *C. montrouzieri* was observed on papaya at Sathyamangalam (Tamil Nadu). The number of larvae were 18 to 30 per leaf. The massive colonisation of *C. montrouzieri*, will help in its effective utilisation against *P. marginatus*.

**KEY WORDS:** *Paracoccus marginatus*, *Cryptolaemus montrouzieri*

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The papaya mealybug, *Paracoccus marginatus* Williams and Granara de Willink (Hemiptera: Pseudococcidae), native of Mexico, was reported in Coimbatore (Tamil Nadu) in July 2008. *P. marginatus* sucks the sap from the leaf resulting in leaf distortion. Fruits covered with mealybugs and sooty mould lose market value (Suresh *et al.*, 2010; Tanwar *et al.*, 2010). Chemicals were used desperately when there was outbreak of *P. marginatus* which gave short-term control. However, chemical control is difficult and requires repeated application of the insecticides (Ayyasamy and Regupathy, 2010). Alternatively, there was good scope for the biological control of the *P. marginatus* using parasitoids.

A total of 22 natural enemies were known to attack *P. marginatus* in different countries (Mani *et al.*, 2012). During October 2010, the parasitoid *Acerophagus papayae* Noyes and Schauff obtained from Puerto Rico through National Bureau of Agriculturally Important Insects, Bangalore was released in the farmer's field of papaya in Coimbatore district. There was substantial reduction of *P. marginatus* density to a very low level upto three months of its introduction (Kalyanasundaram *et al.*, 2010).

The incidence of papaya mealybug and its biological control programme was monitored by making periodical

field visits in Coimbatore district. During the visit in July 2012, large number of *Cryptolaemus montrouzieri* Mulsant were found feeding on *P. marginatus* on papaya plantation located at Sathyamangalam. All stages of *C. montrouzieri* were found amongst the mealybug colonies indicating colonization on papaya mealybug. Number of larvae ranged from 18 to 30 per papaya leaf. Similarly, they were found feeding on the mealybugs on fruits, trunk and flower panicles. The other predators like *Mallada boninensis* (Okamoto) and *Spalgis epeus* Westwood were observed in negligible numbers besides *A. papayae*.

*Cryptolaemus montrouzieri* has been reported as a minor predator of *P. marginatus* in Malaysia (Mastoi *et al.*, 2011), Palau (Muniappan *et al.*, 2008), Hawaii (Ronald *et al.*, 2007) and Florida (Walker *et al.*, 2011) besides India (Shylesha *et al.*, 2011).

In the present investigation, massive colonization of *C. montrouzieri* was reported for the first time on *P. marginatus* in India and elsewhere.

The predator readily settles in large mealybug colonies and feeds on the eggs and larger female mealybugs whereas the parasitoid attacks the mealybug nymphs and scattered low populations (Panis, 1979). *C. montrouzieri* can supplement the exotic parasitoid *A. papayae* in

bringing down the mealybug population quickly. Being a polyphagous predator, the added advantage is that it can feed on the other species of mealybugs including *A. papayae* on papaya.

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