

First report of mealybug, *Crisicoccus hirsutus* (Newstead) on cocoa (Hemiptera, Pseudococcidae) from India

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ABSTRACT: During the survey, five species of mealybugs viz., *Pseudococcus longispinus* (Targioni Tozzetti), *Planococcus citri* (Risso), *Rastrococcus* sp., *Planococcus lilacinus* Cockerell and *Crisicoccus hirsutus* (Newstead) were found damaging cocoa crop. Among these, *C. hirsutus* collected from cocoa plantation of Sagara taluk of Shivamogga District, Karnataka, is a new record from India. © 2024 Association for Advancement of Entomology

KEY WORDS: Pests, survey, new record

Cocoa (*Theobroma cacao* L.) is native of Amazon region of South America. It is an important plantation crop grown for Chocolates around the world. In India, cocoa is being cultivated in the states of Kerala, Karnataka, Andhra Pradesh and Tamil Nadu in an area of 1,03,376 ha with total production of 27,072 MT. In Karnataka, it is cultivated in an area of 14,216 ha with a production of 3,719.10 MT and productivity of 525 kg ha⁻¹ (DCCD, 2020-21). Cocoa crop has several constraints for attaining its maximum yield potential which include the problems of pest and diseases, nutritional imbalance, water stress *etc.* Among these, problem of pests would bring about loss in yield to the greater extent. Though over 150 different insects are known to feed on cocoa, only 2 per cent are of economic importance. Mirid bugs (*Helopeltis antonii* Signoret, *H. bradyi* Waterhouse), cocoa pod borer and mealybug are most significant and widely occurring insect pests of cocoa. Mealybugs are generally not only major pest themselves, but are

well known vector for viruses that are known to transmit cocoa swollen shoot virus (Strickland, 1951; Andres *et al.*, 2017)

Mealybugs (Hemiptera, Pseudococcidae) are one of the destructive insect pests and damage a wide range of horticultural and agricultural crops such as cocoa, coffee, guava, Solanum spp. and citrus (Bodenheimer, 1951). Many species of mealybugs have become serious invasive pests when introduced into new areas beyond their native (or natural) distribution (Miller *et al.*, 2002). About ten species of mealybugs are known to attack cocoa crop (Campbell, 1983). Mealybugs are hard to kill pests of trees and very difficult to manage them (Dhawan *et al.*, 2009). They reduce the fruit quality by sucking at the base of pods, tender twigs, shoots, stalks of tender pods, calyx and tender leaves. This leads to weakening of stalk base, uncharacteristic marks on pods and drying of tender pods. In addition, it also causes the accumulation of honeydew and sooty mould growth on leaves and pods (Lower,

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1968; Sforza *et al.*, 2003).

Periodical surveys were undertaken to study the species diversity of mealybugs in cocoa ecosystem in different places of malnad region during 2017-18 and 2018-2019. The incidence of mealybugs on cocoa was typically observed as cluster of cotton like masses on trunks, stems, chupons (basal shoots), leaves, flowers and pods. The mealybugs were collected carefully with the help of paint brush. Collected mealybugs were preserved in 2 ml tubes containing ethanol (75%). Each sample was given a unique number to associate it with the relevant collection data.

There were more than one species of mealybugs affecting cocoa crop. Species diversity of mealybugs varied with the location, and five species of mealybugs *viz.*, *Pseudococcus longispinus* (Targioni Tozzetti), *Planococcus citri* (Risso), *Rastrococcus* sp., *Planococcus lilacinus* Cockerell and *Crisicoccus hirsutus* (Newstead) were recorded from different locations damaging difeertn parts of cocoa. Among these, *Crisicoccus hirsutus* (Newstead) was the newly identified species which was collected from Sagara taluk of Shivamogga District of Karnataka. *Crisicoccus hirsutus* (Newstead) is the new record of mealybug species from cocoa from India.

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