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A report on occurrence of aphidophagous predators of *Aphis odinae* (van der Goot) (Hemiptera: Aphididae) in cashew ecosystem from Goa, India

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Abstract: The aphid, *Aphis odinae* (Van der Goot) (Hemiptera: Aphididae) is a polyphagous, occasional insect pest of cashew. A field survey was conducted from 2014 to 2015 in cashew plantations to record the incidence of aphid and its predators. Periodical sampling revealed, the occurrence of six species of aphidophagous predators comprising three species of coccinellids, viz., *Scymnus castaneus* Sicard, *Cheilomenes sexmaculata* (Fabricius) and *Pseudaspidimerus flaviceps* (Walker) and three species of syrphids, viz., *Paragus serratus* (Fabricius), *Dideopsis aegrota* (Fabricius) and *Ischidon scutellaris* (Fabricius) were found predating on *A. odinae*. All the immature stages of predators were found predating on first, second, third and fourth instars of the aphid. Among the coccinellids, the dominant species were *S. castaneus* (4.26 grubs/nut) followed by *C. sexmaculata* (0.42 grubs/leaf) and *P. flaviceps* (0.14 grubs/nut). Of the syrphids, *P. serratus* 2.39 larvae/nut was the major predator. The species *D. aegrota* (1.2 larvae/leaf) and *I. scutellaris* (0.5 larvae/nut) were recorded as minor predators. Seasonal abundance of predators was synchronized with the aphid with a maximum occurrence during February 2015. The aphid population gradually reduced from April onwards due to the voracious feeding activity of the predators. The study concluded that the aphidophagous predators, viz., coccinellids and syrphids play a major role in managing the aphid *A. odinae* in cashew and could be encouraged for augmentation and conservation of these predators in a cashew based ecosystem.

Keywords: Aphid, cashew, coccinellids, predation, predators, syrphids.

The aphid, *Aphis odinae* (*Toxoptera odinae*) (Van der Goot) (Hemiptera: Aphididae) is a polyphagous, occasional sucking insect pest of cashew (*Anacarium occidentale*. L). It feeds on trees and shrubs of many plants belonging to the families of Anacardiaceae, Araliaceae, Caprifoliaceae, Ericaceae, Malvaceae, Pittosporaceae, Rubiaceae, Rutaceae, Verbenaceae and Zapotaceae (Raychaudhuri et al. 1981; Lokeshwari et al. 2014; Vidya & Rajanna 2014). It is widely distributed in eastern and southeastern Asia and Africa (Barbagallo & Santos 1989; Martin 1989). Adults are greyish-brown to reddish-brown in colour and reproduce parthenogenetically throughout the year. It has been, however, reported to have a sexual phase on various hosts in Japan (Blackman et al. 2011). Nymphs and adults feed on tender leaves, shoots, inflorescences, apples and nuts and suck the cell sap. They excrete honeydew on which sooty mould develops, impairing photosynthetic activity of cashew and the aphid colonies are ant-attended. The damage is heavier on young plantations and heavy infestation leads to shedding and drying of inflorescences or distorted and malformed nuts and apples. In other economically important crop

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