



## Occurrence of *Aphis odinae* van der Goot and its natural enemies in cashew

K. VANITHA, T. N. RAVIPRASAD, H. RAJASHEKARA and BABLI MOG

ICAR-Directorate of Cashew Research, Puttur- 574 202, Karnataka, India

E-mail: vanitha.k@icar.gov.in

**ABSTRACT:** *Aphis odinae*, a polyphagous aphid, was found infesting cashew trees in Puttur, Karnataka. The damage symptoms caused by these aphids, their seasonality and their natural enemies were recorded in this study. The incidence of aphids was observed from August and April every year. The aphids infest emerging flushes, inflorescences and developing nuts. Severe damage to inflorescence resulted in the drying of flowers and the premature fall of tiny nuts. However, medium-sized cashew nuts usually mature or tolerate the aphid infestation without any damage. The size and germination percentage of aphid infested matured nuts, and healthy nuts indicated not much variation. Under field conditions, four species of coccinellids and three species of syrphids were found preying on different stages of aphids and brought their population under control within a short period. The species of ants associated with aphids were also documented. Considering the incidence and severity of the damage, it is a minor pest of cashew in the study area.

**Keywords:** Cashew, aphids, coccinellids, syrphids, damage symptoms

### INTRODUCTION

Cashew (*Anacardium occidentale* L.) is an important edible tree nut crop grown in parts of tropical and subtropical regions, including India. Cashew kernels are rich in nutrients and used in several confectioneries; cashew apples are also nutritious. Cashew trees are infested by several insect pests, among which tea mosquito bugs and stem and root borers are important. Besides, several minor insect pests damage cashew sporadically; a few are secondary pests of regional importance. *Aphis* (*Toxoptera*) *odinae* van der Goot (Aphididae), also known as mango aphid, is considered a minor pest of cashew, which occurs on new flushes, flowers as well as developing nuts. It is a polyphagous pest, infesting at least 45 plant families (Blackman and Eastop, 2000). The common plants include citrus, tea, coffee, mango, *Aralia* sp., *Rhododendron* sp. etc. (Lokeshwari *et al.*, 2014; Vidya and Rajanna, 2014; Singh and Singh, 2017).

The *A. odinae* is widely distributed in eastern and southeastern Asia and Africa (Barbagallo and Santos, 1989; Martin, 1989, Dwomoh *et al.*, 2008), almost all the cashew growing regions of India (Pillai *et al.*, 1976). It has been associated with the transmission of at least two plant viruses: peanut green mosaic virus and peanut stripe virus (Plantwise, 2022). Generally, aphids are reported as minor pests in cashew and natural enemies play a major role in regulating the pest population. The information on the seasonality of pests, their natural enemies and the associated insects like ants is to be documented in the changing climatic scenario. Hence, the present study was taken to understand the pest status of aphids and the influence of their natural enemies.

### MATERIALS AND METHODS

Random surveys were conducted in 60 ha of cashew plantations of ICAR-Directorate of Cashew Research, Puttur, Karnataka, during 2019-2021 for the occurrence of aphids and their natural enemies. The population of aphids and its predators were recorded monthly on randomly selected trees. The larvae of different predators were collected, brought to the laboratory and reared on *A. odinae* for the emergence of adults. The nature of the damage on shoots, flowers and developing apples and nuts upon aphid infestation was also recorded. To assess the damage status of aphids, net caged trees of cashew variety, VRI-3 having aphid infestation were observed periodically for the pest population buildup and subsequent damage on cashew flowers, apples and nuts. The severely infested nuts were harvested upon maturity and compared with un-infested nuts for the variations in size, weight and germination percentage.

### RESULTS AND DISCUSSION

Surveys in the cashew plantations during 2020-22 indicated that the incidence of aphids was noticed in cashew from August till April in Puttur, Karnataka, in a sporadic manner. Infestation occurred initially on new shoots and was subsequently observed on flowers and nuts. In Ghana, its incidence is reported during February-March on mature trees (Dowmoh *et al.*, 2008). The number of aphids, including adults and nymphs, varied between 10 and 303 per flush or nut during the study period. At Goa, the population varied from 84.44 to 203.07 nymphs and adults per leaf (Maruthadurai and Singh, 2018). Ants played a major role in disseminating aphids to the new plant parts. This pest infests the young cashew shoots, inflorescences and developing nuts.