



## Control of Coconut Black Headed Caterpillar (*Opisina arenosella*, Walker.)

### KEYWORDS

Coconut, Biological control. Black headed caterpillar

### R.D. BORSE

PG-Department of Botany, Padmashri Vikhe Patil College of Arts, Science and Commerce, Pravaranagar, At/P: Loni, Tal: Rahata, Dist: Ahmednagar, Maharashtra, PIN 413 713.(India).

**ABSTRACT** *The present investigation employing the biological control method of coconut Black Headed caterpillar Opisina arenosella, Walker, on Padmashri Vikhe Patil College campus area. Field study was evaluated the pest by using Parasitoids and predators effect significant suppression of Opisina arenosella. The larval parasitoid Goniozus nephantidis (Mues.) is successful control by using as biological control agent. The insect parasitoids are released on palm the pest population reduce larvae and pupil. They are smaller than the host and the larvae develop inside each individual host insect. The parasitoids are specific to the stage of the insect on larval parasitoids, pupil parasitoids and egg parasitoids.*

### INTRODUCTION

Biological control is an important component in organic farming in managing pests. It is safe not only to the farmers but also to the environment. Coconut Black Headed caterpillar *Opisina arenosella*, Walker, is a serious pest of coconut plant. The insect is the most important of the Lepidoptera pest attacking on coconut in India, Shrilanka and Myanmar, Perera, P. A. et.al. (1988). In India it occurs on coconut along the coast of Mumbai, South India, Orissa, Kerala, Bengal, Rao, Y. R. et.al. (1948), Nadarajan, L. and Channa Basavanna, G. P. (1980). Among the few species of palms that serve as its host, coconut is the only one that is cultivated. Populations breed throughout the year in five discrete generations, each generation lasting 65–75 days, Ramkumar, et.al. (2006). Symptoms of black headed caterpillar, damages of leaves by scraping green matter. The caterpillars feed on the chlorophyll containing parenchymatous tissue. Only the upper epidermis is kept intact and damage to the leaves affects the photosynthetic efficiency of the palm which leads to severe decline in yield. The release of these bio control agents are easy and can multiply in the region which constantly keep the pests in check.

### MATERIAL AND METHODS

The biological control parasitoid *Goniozus nephantidis* (Mues.) was mass culture on the larve of rice moth *Corcyra cephalonica* in the laboratory. The male and female *Goniozus nephantidis* (Mues.) were released in the container for mating. Adult moth provided with honey solution 50 % and cotton moistened with water. After 4-6 days the females were separated and kept in glass bottle. Mature *Corcyra* larvae were release into each bottle. After parasitization, the paralyzed larvae containing eggs were gently removed by holding the head or abdomen using a fine paper or forceps without disturbing the eggs. The parasitoids were found to lay eggs generally on all parts of the body except head and abdomen. Parasitoid larvae were placed on the tissue paper, and kept in a transparent plastic box for cocoon formation. Freshly emerged adults were used for the field biological control. Field trials was conducted at, P.V.P. College, Loni campus during 2007-08. The coconut plants were selected free from any pesticide application. Initial field observation and pretreatment sampling revealed that 80-90 % coconut plants were affected by *Opisina arenosella*. The pest population was in differ-

ent stages. The treatment consisting release of parasitoids on palms and compared with untreated plots. The method of release of parasitoids was as per the technique by Venkatesan et al.(2003). Monthly observations on the population of pest and *Goniozus nephantidis* (Mues.) were taken. The treatment was replicated 3 times.

### RESULTS AND DISCUSSION

The results indicate that number of larvae per leaflets in the treatment various number of parasitoids release on month of intervals. The larval population in all the treatments increased as compared to larval parasitoids, larval population of pest is decreased in all the treated palms. The present investigation clearly indicated that more the number of parasitoids released, lesser the larval population and these findings were similar to George et.al (1977), Sundaramurthy et.al (1979) They reported that larval parasitism due to *Goniozus nephantidis* (Mues.) was directly proportional to host density.

Observation on the effect of field release of various doses of *Goniozus nephantidis* (Mues.) on the population of the parasitoids on coconut palm revealed that there was increase in the parasitoid population during the February - October after release. However the difference was no significant from February to April and August to October. In June- July maximum number of parasitoids was observed in the higher dose of parasitoids per plants and significantly different from other untreated plant. Pillai and Bhatt (1986) reported occurrence of *Goniozus nephantidis* (Mues.) throughout the year and peaked in summer. On the observation studies between larval population of *Opisina arenosella* Wlk and population of *Goniozus nephantidis* (Mues.) revealed that there was highly significant positive correlation between larval and parasitoid populations on different months and control the black headed caterpillar on coconut. This type of control is very successful and chief method on palm plant.

### Acknowledgement

The authors are grateful to Dr. K. J. Salunke, Head, Department of Botany and Dr. S.R. Walunj, Principal, P.V.P. College, Loni, for providing necessary laboratory facilities.

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