

Research Paper :

Influence of artificial diets on the biology of *Mallada boninensis* (Okamoto)



A.B. PATIL, T.B. UGALE AND D.B. UNDIRWADE

International Journal of Plant Protection, Vol. 4 No. 2 (October, 2011) : 241-247

SUMMARY

The present investigation were carried out at Entomology Section, College of Agriculture, Nagpur, during the year 2004-2005, with a view to standardize mass rearing techniques of *Mallada boninensis*. Attempts were made to evaluate the ten artificial diets along with standard laboratory host (factitious host) i.e. eggs of *Corcyra cephalonica*. The least larval duration (8.90 days), highest larval weight (8.50 mg) at the end of last instar, maximum pupation (94 %) with least pupation duration (7.98 days), highest pupal weight (6.73 mg) were recorded on *Corcyra* eggs. Also, lowest pre-mating period of 3.53 days and 1.09 hours of mating period was recorded on *Corcyra* eggs. The highest male longevity of 46.30 days, highest fecundity of 295 eggs/female, minimum incubation period of 3.10 days with highest per cent viable eggs of 94% of *M. boninensis* were recorded on *Corcyra* eggs. While the minimum pre-oviposition period of 6.80 days was observed on Pushpalatha's diet and Venkatesan's diet-3, highest oviposition period of 50.50 days was recorded on Venkatesan's diet-3, while highest female longevity of 55.89 days recorded on Venkatesan's diet-1. Considering all these aspects together, standard laboratory host (inactivated eggs of *Corcyra cephalonica*) performed the best followed by Venkatesan's diet-2, Proposed diet-3, Venkatesan's diet-1, Proposed diet-1, and Pushpalatha's diet. The predator grew faster on eggs of *Corcyra* than artificial diets.

See end of the article for authors' affiliations

Correspondence to :

T.B. UGALE

Department of
Entomology, K.K.
Wagh College of
Agriculture, NASIK
(M.S.) INDIA

Email : tushargrapes@
gmail.com

Patil, A.B., Ugale, T.B. and Undirwade, D.B. (2011). Influence of artificial diets on the biology of *Mallada boninensis* (Okamoto). *Internat. J. Plant Protec.*, 4(2): 241-247.

Key words :

Artificial diet,
Biology, *Mallada boninensis*

Crop protection is very important aspect in agriculture. No doubt till date use of synthetic pesticides is the choicest method of pest management which results in the development of pesticides resistance, pest resurgence, residual toxicity, imbalance in ecological equilibrium, environmental pollution etc. Due to these ill effects, the concept of pest management is changing from chemical control to the Integrated Pest Management (IPM). These include the use of natural enemies as one of the important components for pest management because they are ecologically safer, ecologically viable, self-perpetuating and long term effective against crop pest. During the last two decades, the role of chrysopids (green lacewings) as a predator of pest has been appreciated all over the world in IPM programme.

In Vidarbha, citrus growers are facing serious problem from last two decades due to heavy attack of citrus blackfly (*Aleurocanthus*

woglumi Ashby). The citrus is also attacked by various pests viz., citrus psylla, aphid, white fly mealy bugs etc. The occurrence of citrus black fly has been noticed throughout the year. It has been observed that *Mallada boninensis* (Okamoto) predate on the citrus blackfly (Naib, 1986 and Satpute, 1992). The larvae of *Chrysopa* spp. have been reported predate on all the stages of *A. woglumi* Ashby (Dietz and Zetak, 1920). *Mallada boninensis* (Okamoto) has also ageist potential to use as biocontrol agent against citrus aphids, whiteflies, citrus psylla and mealy bugs (Anonymous, 1997).

There are number of natural enemies of insect pests which co-exist with them in different ecosystems. Amongst a very complex network of bioagents, the Chrysopid is known to be the most effective predator. Out of 13 Chrysopids reported from India, *Mallada boninensis* (Okamoto) (Neuroptera :Chrysopidae) is the predominant species.

Received :

January, 2011

Revised :

May, 2011

Accepted :

July, 2011