Research Paper :

Biology of *Mallada boninensis* (Okamoto) on artificial diets

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SUMMARY

The present investigation was 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* was recorded on *Corcyra* eggs.

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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 changes 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 for the 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. So, it is necessary to control throughout the year. It is seen that *Mallada boninensis* (Okamoto) predates on the citrus blackfly (Naib, 1986 and Satpute, 1992). The larvae of *Chrysopa* spp. have been reported predating 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 a 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* (Neuroptera :Chrysopidae) is the predominant species.

Rearing in captivity needs good diet. In the efforts to mass rear them, investigations on dietary requirements and artificial diets with varying degrees of success for rearing of *C. carnea* have been reported (Pushpalatha, 1994; Venkatesan *et al.*, 2000, Palsingh and Verma, 1989).

However,still concentrated efforts were not made for the comprehensive studies of these groups in India to serve as the base for its effective utilization as a predator,