Internat. J. Agric. Sci. Vol.3 No.2 June, 2007 : 164-166

Predatory efficacy of *Mallada boninensis* (Okamoto) against *Aleurocanthus woglumi* Ashby on citrus

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ABSTRACT

A field study was carried out to evaluate the predatory efficacy of *M. boninensis* against *A. woglumi*. It was revealed that, all releases of *M. boninensis* for the suppression of *A. woglumi* were significantly superior over control. Amongst all the releases, 60 eggs and 50 eggs per tree were most promising treatments. Though the chemical method offers effective control, the control by *M. boninensis* can be the most suitable method due to its ecofriendlyness as well as continuous process of pest suppression.

Key words: *Aleurocanthus woglumi*, *Mallada boninensis*, Citrus, Biological control.

INTRODUCTION

Citrus (Nagpur Mandarin) is a very important fruit crop, especially for the Vidarbha region. Citrus blackfly, *Aleurocanthus woglumi* Ashby is considered to be the main reason for citrus decline, causing heavy losses in yield and quality of fruits. Both nymphs and adults suck the cell sap and excrete honeydew like substance on which black sooty mould (*Capnodium citri*) grows rapidly in humid conditions, that leads to the black layer manifestation locally called as 'kolshi'. For a successful fruit set a minimum of 2.2 per cent organic nitrogen content in leaf is a pre-requisite and five to ten blackflies per cm^2 area are sufficient to reduce leaf nitrogen level below that and affect fruit setting (Shivankar and Singh, 2000). It is seen that a Chrysopid, *M. boninensis* predates on *A. woglumi* and it also has a wide range of hosts i.e. aphids, citrus psylla, mealy bugs. Hence *M. boninensis* can survive in the field in absence of citrus blackfly.

MATERIALS AND METHODS

The studies on field releases of *Mallada boninensis* against *A. woglumi* Ashby were conducted during 2004-2005. The experiment was initiated in randomized block design with total 10 treatments and was replicated thrice. One citrus tree was considered as a treatment plot.

Treatment details

T_1 - 10 eggs of *Mallada boninensis* (Okamoto) per tree
T_2 - 20 eggs of *Mallada boninensis* (Okamoto) per tree
T_3 - 30 eggs of *Mallada boninensis* (Okamoto) per tree
T_4 - 40 eggs of *Mallada boninensis* (Okamoto) per tree
T_5 - 50 eggs of *Mallada boninensis* (Okamoto) per tree
T_6 - 60 eggs of *Mallada boninensis* (Okamoto) per tree
T_7 - 10 larvae (first instar) of *Mallada boninensis* per tree
T_8 - 20 larvae (first instar) of *Mallada boninensis* per tree
T_9 - Malathion 50 EC @ 0.075 per cent
T_{10} - Control

The mass rearing of *M. boninensis* was carried out as per the standard procedure (Anonymous, 1997) in the Biocontrol laboratory, College of Agriculture, Nagpur during entire experimentation. The infestation of *A. woglumi* was observed in the field with about 50 per cent hatching of eggs. Thirty trees were selected and from each tree ten shoots were selected. The proportionate number of eggs and larvae were released on each tree. First release of eggs, larvae and spraying of malathion was undertaken on 04/12/2004 and subsequent application was done on 19/12/2004, 15 days after first application on same shoot. Pretreatment observations were recorded 24 hrs. before each release. Post-treatment observations were recorded 7 and 14 days after each application.

RESULTS AND DISCUSSIONS

The data presented in Table 1 revealed that, the results were significant and all the treatments were significantly superior over control.

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