



BIOLOGICAL CONTROL - LADYBIRD BEETLE EFFICACY AGAINST APHIDS (CHAITOPHORUS SPP.)

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ABSTRACT:

The present communication deals with the biological control - ladybird beetle Efficacy against aphids (Chaitophorus spp.) Fully matured ladybird beetles and aphids were collected from the willow trees. These natural enemies were reared on the aphids for the collection of larvae of ladybird beetles. The results show that there was significant control of Chaitophorus spp by the ladybird beetles. The efficacy of ladybeetle from 1st to 3rd instars against Chaitophorus spp. was tested during the whole experiment. The immature stage of the beetles instars when feed on aphids have more survival rate and grows very fast. So the efficacy of ladybird beetle against the Chaitophorus species is very good. Plants can be saved from the attack of aphid by using the ladybird beetles.

KEYWORDS:

LADYBIRD BEETLES, BIOLOGICAL CONTROL, APHIDS, NATURAL ENEMY.

INTRODUCTION

Ladybird beetles are the member of class insecta and belong to family Coccinellidae. As all other insects, beetles have an outer skeleton known as exoskeleton. This outer skeleton gives protection and provides the attachment places for muscles. Body of these insects is consisting of three main regions: head, thorax and abdomen Ladybird beetles have very distinctive shape and can be easily identified. Some species of ladybird beetles are judged as pests due to their attack on the vegetative parts of plants

OBJECTIVE

To determine the control of aphids (Chaitophorus spp.) through Lady bird beetle.

MATERIALS AND METHODS

Insects fully matured ladybird beetles and aphids (Chaitophorus spp) were collected. These natural enemies are reared on the aphids for the collection of larvae of ladybird beetles. Collected beetles were sorted out in the laboratory and pairs were kept in the three jars named as jar A, jar B and jar C to get the eggs and then larvae. Mother ladybird beetles laid eggs and after about a week the eggs hatched and became small black larvae with orange and white markings. Then these larvae were collected for this study.

METHODS

After the collection of larvae the study was carried out up to the 3rd instars of beetle's larvae. From each jar A, B and C three larvae were taken in to the three separate Petri dishes. It means three groups of Petri dishes were made classified as group 1, group 2 and group 3. Five aphids in each Petri dish were increased after every two days. In

first 2 days five aphids were placed daily in each of the replication. In next two days ten aphids were fed to each of the larvae daily and so on. Reading was taken after every 24 hours for couple of weeks that how many numbers of aphids consumed by each instars.

RESULTS

The results from the current study show that there is significant control of Chaitophorus species by the ladybird beetles. The efficacy of ladybeetle from 1st to 3rd instars against Chaitophorus species was tested during the whole experiment. The instars is immature stage of the beetles have more survival rate and grows very fast when fed on the aphids. The data obtained from this experiment at homogenous environment on the daily basis. The pray predator relations of each day were intended and their data is recorded in the table 1 and table 2. The average value of consumed aphids by the 1st to 2nd instars and from 2nd to 3rd instars is written in the table 1 and table 2 of each replication respectively.

TABLE 1: NUMBER OF APHIDS CONSUMED BY LARVAE/DAY FROM 1ST TO 2ND INSTARS.

TREATMENT	R1	R2	R3
T1	12.6	11.6	11.3
T2	13.4	10.3	12.3
T3	11.6	10.3	12.4

TABLE 2: NUMBER OF APHIDS CONSUMED BY LARVAE/DAY FROM 2ND TO 3RD INSTARS

TREATMENT	R1	R2	R3
T1	12.6	11.6	11.3
T2	13.4	10.3	12.3
T3	11.6	10.3	12.4

CONCLUSION

From calculations it is cleared that mean consumption of aphids by the larvae of ladybird beetles in all treatments is almost equal.

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