Research Paper :

Comparative Biology of *Bracon hebetor* Say on *Corcyra cephalonica* Stainton and *Opisina arenosella* Walker

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SUMMARY

In *Bracon hebetor* Say mating frequently occurrs during day and night. Pre-oviposition period on *Corcyra cephalonica* and *Opisina arenosella* lasted for 15.5 and 17.8 hours, oviposition period 34.7 and 26.5 days and post-oviposion period 4.75 and 2.8 days. Eggs were deposited singly on ventral side of both the host larvae with an average of 423.3 and 33.7 eggs. Incubation period, larval period, pre-pupal period and pupal period lasted for 23.32 hours and 24.26 hours, 64.8 hours and 72.48 hours, 0.46 days and 0.93 day and 4.37 and 5.3 day on *C. cephalonica* and *O. arenosella*, respectively. Larvae passed through five instars, pupation took place in silken cocoon near vicinity of the host. Male and female adults from *C. cephalonica* and *O. arenosella* survived 14.2 and 37.9; 12.05 and 20.85 days, respectively. Life-cycle completed within 8.25 and 10.56 days on *C. cephalonica* and *O. arenosella*, respectively. Sex-ratio of male to female adult was 1.66:1 on *C. cephalonica* and 1.30 :1 on *O. arenosella.*

Key words : *Bracon hebetor*, biology, *Corcyra cephalonica*, Opisina arenosella

Bracon hebetor Say (Braconidae) is a most well known parasitoid of a number of Lepidopteran pests both in the field and in storage. It was first recorded on *Corcyca cephalonica* infesting stored grains (Krishna Ayyar, 1934). Biological control of insect pests of sesamum, lab-lab etc. was recorded by Appanna (1953). *B. hebetor* is a highly polyphagous parasitoid and distributed in many countries. Being gregarious and easy to rear in the laboratory on the factitious hosts, *C. cephalonica* stainton, it was reared in large numbers and released in the field for the suppression of *O. arenosella* population efficiently (Pillai and Nair, 1993). Since the biology of the parasitoid differs in different hosts so the sufficient knowledge about the biology of an insect parasitoid is necessary for adopting suitable biological control.

MATERIALS AND METHODS

The present investigations was carried out under laboratory conditions at the Biological Control Laboratory, Department of Agricultural Entomology, College of Agriculture, Dapoli, Dist. Ratnagiri (M.S.) during the year 2006-2007. Initial culture of *B. hebetor* was collected from Agriculture Research Station, Ambajipeta, east Godavari district, Andhra Pradesh. It was maintained and multiplied on the larva of *C. cephalonica* and then used for rearing the parasitoid. The culture of *C. cephalonica* was multiplied in the biocontrol laboratory. The culture of *O. arenosella* was collected from the fields of Agril. Research Station, Palghar, Dist. Thane and reared in the biological control laboratory. The 5th and 6th instar larvae of both natural as well as factitious hosts were used for study the biology of *B. hebetor*

Adults emerged from the culture were kept in the glass tube for two days and mated females were used for the mass multiplication on *C. cephalonica*

Healthy fifth and sixth instar *Corcyra* larvae were separated from *Corcyra* rearing boxes. The larvae were then transferred singly into glass vial by using a camel hair brush containing females of *B. hebetor* selected from original culture. A drop of honey was also provided as a source of nutrition. The parasitized *Corcyra* larvae were removed from the vial daily and fresh larvae were introduced into the same tube, taking care that the females of *B. hebetor* does not escape. In this way, the fresh *Corcyra* larvae were provided till the females of *B. hebetor* parasitized them by laying eggs.

The parasitized larvae with eggs of *Bracon* were placed on corrugated paper strips. These strips with parasitized larvae were placed in plastic boxes of approximate size and stored for three days until parasitic larvae reaches the pupal stage, once larvae attained

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