Appl. Ent. Phytopath.
Vol. 71, No. 1, Sep. 2003

Biological characteristics of *Dibrachys boarmiae* (Hym.: Pteromalidae), an active parasitoid of codling moth fully developed larvae

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ABSTRACT

The biological characteristics of *Dibrachys boarmiae* were studied in East Azarbaidjan during years 1999 and 2000. *D. boarmiae* is a gregarious pteromalid ectoparsite on the larvae in cocoon of codling moth in Tabriz. Field observations indicated that the pest overwintered as fully-grown larvae on the host under loose bark of apple and other fruit trees. The parasitoids start to emerge when apples are in bloom. Adult males emerged earlier than females. The adults were observed from May until November. Three or more complete generations of this wasp were known to occur in apple growing areas of Tabriz. The results indicated that the efficacy of the parasitoid was negligible in controlling the first and second generations of the pest, but increased with progressive improvements in environmental conditions. The highest larval parasitism rate in the last generation of the pest appeared to be 21.4% in year 2000. The studies during autumn showed that the average longevity of females and males was 35.8 $\pm$ 17.4 and 19.4 $\pm$ 7.5 respectively. The sex ratio was 0.71: 1 and the average rate of parasitism per female was calculated as 1.2 $\pm$ 0.63. The biology of *D. boarmiae* being studied in the laboratory at 20 $\pm$ 2°C, 60 $\pm$ 1 0% R.H. and 14:10 (L: D) indicated that the egg hatching lasted for 4 $\pm$ 1.1 days, the larval stages taking 14.3 $\pm$ 2.3 days and the pupal stage averaged 10.8 $\pm$ 1.5 days .The life span of adults kept without food under above mentioned laboratory conditions averaged 17.6 $\pm$ 8.1 days for females and 12.3 $\pm$ 3.9 days for males. Sex ratio (female/male) was found to be 0.64: 1.

Keywords: Parasitoid, Codling moth and *Dibrachys boarmiae*

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