BIOLOGY OF THE ALMOND MOTH, *Ephestia cautella* (Walker) ON TWO LARVAL DIETS AND EFFICACY OF THREE EGG PARASITOIDS, *Trichogramma* spp. AND THE LARVAL PARASITOID, *Habrobracon hebetor* (Say) FOR CONTROLLING IT ON DRIED DATE FRUITS

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THESIS

Submitted in Partial Fulfillment of the Requirements for the

Degree of

DOCTOR OF PHILOSOPHY

In

Agricultural Sciences
(Economic Entomology)

Department of Economic Entomology and Pesticides
Faculty of Agriculture
Cairo University
EGYPT

2014

APPROVAL SHEET

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ABSTRACT

Certain biological aspects of the almond moth, *Ephestia cautella* (Walker) and selected natural enemies of it (the egg parasitoids belong to the genus *Trichogramma* spp. and the larval parasitoid, *Habrobracon hebetor* (Say) were investigated as alternative pest management tools in post-harvest storage during the sun-drying period of date fruits. Biological studies were carried out at 27±2°C, 65±5% R.H. and 16:8 (L: D) illumination period, on both an artificial diet and date fruits. Considered biological aspects were ovipositional periods, fecundity, adult longevity, incubation period, hatchability, larval duration, pupal duration and generation period. The total life-cycle duration of *E. cautella* was shorter and fecundity higher when larvae were reared on the artificial diet compared to date fruits.

Three native species of the egg-parasitoid *Trichogramma i.e., T. bourorachae, T. evanescens and T. cacoeciae* were tested against *E. cautella* eggs. Host preference and host age preference were approximated. *T. cacoeciae* was the most effective against *E. cautella* eggs. Also, host instar preference was studied for the larval parasitoid, *H. hebetor* on *E. cautella* larvae. The effective density of release was tested for the egg parasitoid (*T. cacoeciae*) and larval parasitoid (*H. hebetor*) as bio-control agents on artificially infested date fruits by *E. cautella* eggs, 90 ♀♀ of egg-parasitoids and 10 pairs of larval-parasitoid/3Kg date fruits were effective densities for controlling *E. cautella* that gave 100% infestation reduction.

Key words: *Ephestia cautella***,** *Trichogramma bourorachae, T. evanescens, T. cacoeciae, Habrobracon hebetor,* Biology, Biological control, dried date fruits**.**

ACKNOWLEDGEMENT

The writer wishes to expresses her deep appreciation and thanks to ***Dr. Monir M. El-Husseini,*** *Professor of Economic Entomology, Faculty of Agriculture, Cairo University, for suggesting the research subject, fruitful supervision, careful guidance continuous advice, reading the manuscript and constructive criticism which made this work possible.*

Thanks are also due to ***Dr. Sayeda S. A. Abdel Samad****, Assistant Professor of Economic Entomology, Faculty of Agriculture, Cairo University, for her participation in the supervision, valuable advice, continues help, and reviewing the manuscript.*

Thanks are further extended to ***Dr. Essam A. Agamy,*** *Professor of Economic Entomology, Faculty of Agriculture, Cairo University, for providing the three tested Trichogramma spp. and the eggs of Sitotroga cerealella, and his valuable support throughout the course of this study.*

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