

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Studies on the biology and control of faba bean beetle
Bruchidius incarnatus (Boh.)
(Coleoptera: Bruchidae)

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A thesis submitted in fulfillment for the degree
of M.Sc. in plant protection

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December 2003

DEDICATION

To my dear mother

To my daughter Duaa

To all my family

With love

ACKNOWLEDGMENT

I would like to express my gratitude and sincere thanks to my supervisor Prof. Zuhair Al Fadil Al Abjar for his help and guidance during this study.

I am also grateful to Dr. Seif Eldin M. Kier and Dr. Awad Khalafalla for their advice and interest.

Due thanks are also extended to the members of the library of Faculty of Agriculture University of Khartoum and the members of the Department of Plant Protection, University of Sudan (Shambat) for their assistance. Sincere thanks are also extended to staff members of the Environment and Natural Research Institute for their help. Many thanks to Miss Ekhlas Yasien for her patience in typing this thesis. Thanks to all those who helped in any way.

ABSTRACT

The study investigated the effect of some physical, biological and chemical factors on some behavioural aspects of the insect *B. incarnatus* with emphasis on oviposition and life tables.

Egg laying on five selected legume seeds showed that the insect lay more eggs on lupin followed by broad bean. When the insect was cultured on different densities of faba bean seeds, it seems that statistically density has no significant effect, though of the variation on the number of laid eggs. The effect of intact and broken seeds (with testa and without testa) on egg laying was significant. High amount of eggs was laid on intact seeds with testa (241.6 eggs) and on broken seeds without testa 31.6 eggs. Egg laying was also affected significantly by the fresh and dry seeds and pods. Dry seeds received more number of eggs (135.4 eggs) compared to 107.36, 63.38 and 11.12 eggs laid on green pods, green seeds, and dry pods respectively. The highest percentage of hatchability among seeds without testa, was recorded in the faba bean seeds (88.67%) and the lowest was noticed in the garden pea and chick pea seeds (81.33%). While among seeds with testa the highest percentage of hatchability was found in pigeon pea and garden pea (80%) and the lowest was recorded on faba bean (59.67%). The highest larval duration was recorded in variety Seliam (34 days) and the lowest was in variety Habashi (14.5 days). Long duration of pupa was noticed in variety Super (17.5 days) compared to 14.5, 13.5, 13 and 11.5 days in varieties Englesi, Seliam, Basabeer, and Habashi respectively. The highest percentage of the adult emergence was noticed in variety Basabeer (50.5%) while the lowest was found in variety Habashi (1.5%). The highest innate capacity for numerical increase (r_m) was in variety super (0.011). The mortality

rate of the insect when raised on seeds treated with neem oil of the two varieties Seliam and Basabeer, increased with the increase in the concentration. The highest mortality was 8.67 adults at concentration 8% and the lowest was 4.33 adults at concentration 1% in variety Basabeer.

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