

# **Dedication**

To my father

To my mother

To my brothers and sisters

With love and respects

## ACKNOWLEDGEMENTS

I am gratefully indebted to my supervisor Prof Asim Ali Abdelrahman for all the encouragement, help, guidance and continued support.

I would particularly like to express my deep thanks to Dr. Ahmed Hassan (Agricultural Research and Technology Corporation) for his advice, valuable assistance and co-operation. Thanks are also due to my brother Osama Abdelazim for his valuable assistance. Thanks are extended to my colleagues in Shambat and to all those who have helped me during my work.

## ABSTRACT

The experimental work was conducted during the period of March–September (2005) in the laboratories of the College of Agricultural Studies Shambat of Sudan University of Science and Technology to study the life cycle of two species of the Egyptian bollworm *Earias insulana* (Boisd) and *Earias vittella* (F.), and to assess the effect of three concentrations of *Bacillus thuringiensis* (4, 7, and 10 gm/l) on the larvae. The design of the experiment was the Complete Randomized Block with four replicates.

The life cycle studies showed that the two species *Earias inuslana* (Boisd) and *Earias vittella* (F.) completed development in  $32.1 \pm 4.6$  and  $31.1 \pm 5.2$  days respectively under the laboratory conditions (temp.  $26 \pm 3^{\circ}\text{C}$  & RH 42%).

Treatment of the 1<sup>st</sup> instar larvae in the 2 species with *Bacillus thuringiensis* (Agerin<sup>®</sup>) gave a very high mortality (93-100%). The few individuals which survived gave small size adults when compared with adults of untreated control.

## ملخص الدراسة

أجريت هذه الدراسة بمعامل كلية الدراسات الزراعية شمبات بجامعة السودان للعلوم والتكنولوجيا في الفترة من (مارس - سبتمبر 2005) لدراسة دورة حياة نوعين من دورة اللوز المصرية (*Earias insulana* and *Earias vittella*) وكذلك دراسة اثر البكتريا (*Bacillus thuringiensis*) عليهما كمبيد باستعمال ثلاث تراكيز وصممت التجربة بالتصميم العشوائي الكامل أربعة مكررات لكل تركيز من 4، 7، 10 جم / لتر.

وأظهرت النتائج أن دورة حياة كل من (*Earias insulana* and *Earias vittella*) تكتمل في  $4.6 \pm 32.1$  و  $5.2 \pm 31.1$  يوم علي التوالي وكذلك أوضحت الدراسة أن استخدام البكتريا (B.T) المنتج التجاري (Agerin®) أدى إلي نتائج موت عالية للطور الأول لكل من نوعي الحشرة بلغت 93-100% كذلك فإن الأطوار التي تمت معاملتها بهذه البكتريا أدت إلي إنتاج حشرات بالغة (Adult) صغيرة الحجم مقارنة بمعاملة الشاهد.

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