BIOEFFECT OF *BACILLUS THURINGIENSIS* AS BACTERICIDE AGAINST SOME COTTON PESTS

BY

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ABSTRACT

Salim Mohamed Taher Khoja, Bioeffect of *Bacillus thuringiensis* as Bactericide Against Some Cotton Pests. Unpublished Ph.D. Dissertation, Ain Shams University, Faculty of Agriculture, Department of Plant Protection, Egypt, 2005.

The present work is an attempt to throw some light on the natural bio-agents; entomopathogenic bacteria (*B. thuringiensis* Berl.) which cause diseases to the larvae of both pink bollworm *Pectinophora gossypiella* (Saund.) and spiny bollworm *Earias insulana* (Boisd.).

Percentages of bolls' infestation with bollworms in the field are progressively increased toward the end of season and after harvest. While mean percentages of infected bollworms larvae with natural bacteria was higher after harvest comparing with cotton growing season.

Laboratory experiments were carried out to investigate the effect of two bacterial commercial products of *B. thuringiensis* sub sp. *Kurstaki* (Dipel 2x and Protecto) on the eggs and newly hatched larvae of both pink and spiny bollworms. Also the isolated bacterial strains were tested to evaluate their efficiency on the newly hatched larvae. Results showed that the treatment of eggs did not affect, significantly, while the mortality percentage of newly hatched larvae produced from the treated eggs was high according to the used concentrations. Percentage of larval mortality increased by increasing the applied concentration. Also LC_{50}s values had been calculated after 3-7 days of treatment by the two tested bacterial commercial products of *B. thuringiensis* sub sp. Kurstaki (Dipel 2x and Protecto).

Histopathological studies on uninfected and infected larvae with Dipel 2x, Protecto, and isolated bacteria, showed certain

histopathological changes in the midgut of treated larvae by comparing with untreated.

Biochemical studies showed that, the difference in total protein bands patterns were found in uninfected and infected larvae as well as the tested entomopathogenic bacteria.

Key word: *Bacillus thuringiensis,* pink bollworm; *Pectinophora gossypiella* and spiny bollworm; *Earias insulana*.

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