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TOXICOLOGICAL AND LETENT EFFECTS OF CERTAIN COMPOUNDS ON THE BLACK CUTWORM *AGROTIS IPSILON* (HUFN) IN THE LABORATORY.

BY

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ABSTRACT

This study carried out in the laboratory to evaluate the toxicity of chloropyriofos 48% (chlorozan) one of the organophorus insecticides; neemix (azadirachtni 4.5%) and Dipel-2x (*Bacillus thuringiensis*) against *Agrotis ipsilon*. Data obtained showed that; chlorozan had the greatest lethal effect on 4th instar larvae of *A.ipsilon*. The highest mortalities (98%) had been occured after the treatment with 0.125ppm concentration at 72h. Data also revealed that the concentration of Neemix 4.5% lead to lower mortality percentage for 4th instar larvae of *A. ipsilon* treatments with *Bacillus thuringiensis* (Dipel-2x) on the 4th instar larvae of *A. ipsilon* indicated that, there was no larval mortality during the first day after treatment. The mortality increased by time dapsing after treatment with Bt. Pathogen and reached 60% after 7 days post treatment with 2g/100ml Dipel- 2X.

INTRODUCTION

The lepidopterous insects are considered the most polyphagous insect pest in Egypt. They attack more than 70 different field crops including vegetables, fruit trees, ornamental plants, medicinal and aromatic plants, besides weeds and wild plants. One of this pests, is the black cutworm, *Agrotis ipsilon* causes serious damage to different parts of plants beside cutting of the stems under ground causing death of seedlings. In Egypt, changing of climatic and environmental conditions are not drastic enough to play an important role in the size of infestation. So our work in this part carried out in laboratory to evaluate the toxicity of one organophorus insecticides (chloropyrifos 48%), one plant extract (Neemix 4.5%)and also one bacterial insecticide (Diple-2x) against 4th instar larvae of *Agrotis ipsilon*.

MATERIAL AND METHODS

The culture of *A. ipsilon* used in this study originated from eggs obtained from susceptible laboratory strain established in the Black cutworm Department, of Plant Protection Research Institute, Dokki, Giza. The culture was maintained and built up under 27 + °C 4th instar larvae were chosen randomly and individually left without feeding for 24 hours before treatment. All experiments were also conducted under the same temperature.

1) Insecticides and concentrations:

a- Chemical insecticide chloropyrifos 48% (chlorozan)
(0.125 – 0.063 – 0.032 – 0.02 – 0.01) ppm

b- Plant extract Neemix (azadirachtin 4.5%)
(100 – 50 – 25 – 12.5 – 6.3)ppm

c- *Bacillus thuringiensis* var. Rurstaki Dipel-2x (32000 international Units)
(2 – 1 – 0.5 – 0.25 – 0.125 gm/100ml)