EVALUATION OF THE EFFECT OF SOME CHITIN SYNTHESIS INHIBITORS ON HAEMOLYMPH AND EGG VIABILITY OF THE DESERT LOCUST, *Schistocerca gregaria* (FORSKAL) IN LAB .

A Thesis submitted to the Department of Entomolgy, Faculty of Science, Ain Shams University

In partial fulfillment of requirements for award of the M. SC. Degree in Entomology

By

Eman Kamel Mohamed Mohamed

(B. SC.)

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SUPERVISORS

Prof Dr . Reda Fadeel Ali Bakr
Prof Dr. Nagi Sabet Badawy
Prof Dr. Soryia El–tantawy Hafez

Board of Supervision :

Prof Dr . Reda Fadeel Ali Bakr
Professor of Entomology ,
Entomology Department ,
Faculty of Science ,
Ain Shams University

Prof Dr . Nagi Sabet Badawy
Professor of Biochemistry ,
Locust and Grasshopper
Research Section ,
Plant Protection Research
Institute , Agric . Res . Center ,
Ministry of Agriculture

Prof Dr . Soryia El-tantawy Hafez
Professor of Entomology ,
Entomology Department ,
Faculty of Science ,
Ain Shams University

THESIS EXAMINATION COMMITTEE

NAME	TITLE	SIGNATURE
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.....	.....	.....
.....	.....	.....
.....	.....	.....

SUPERVISORS

Prof Dr . Reda Fadeel Ali Bakr

Professor of Entomology, Faculty of Science ,
Ain Shams University.

Prof Dr. Nagi Sabet Badawy

Professor of Biochemistry , Plant Protection Research Institute, Agric. Res. Center.

Prof Dr . Soryia El – tantawy Hafez

Professor of Entomology , Faculty of Science,
Ain Shams University

Biography :

Date and Place of Birth	**:**	**27 – January 1976 , Cairo.**
Date of Graduation	**:**	**June 2000**
Degree awarded	**:**	**B. Sc. Entomology,2001, Faculty of Science , Ain Shams University .**
Date of registration For the M . Sc. Degree	**:**	**December 2003 .**

* بسم الله الرحمن الرحيم *

**الرحمنُ (1) عَلَّمَ القرأن (2) خلق الإنسان (3) علمهُ البيان (4) الشمس و القمر بحسبان (5) و النجم و الشجر يسجدان (6) سورة الرحمن

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ABSTRACT

The newly starved moulted 5th nymphal instars and adults of ***Schistocerca gregaria*** were treated with concentrations (10 , 25 , 50 , 100 , 150 and 200 ppm.) of Lufenuron and Flufenoxuron by using feeding technique. This treatment was carried out during one–day old, to disclose the biological effects of chitin synthesis inhibitors

compounds. The obtained results revealed that, the treatment by IGRs resulted in over – age of the treated nymphs, some of which survived for long periods without moulting to the adult stage, others unable to complete the moulting process, died during moulting process, malformed adults also were observed and some able to moult without malformation. No sexual maturation was observed in the moulting adults, which treated as nymphal stage and adult – stage during one – day old. 90.4 % and 98% total inhibition of adult emergence was recorded, when treated nymphs by the different concs. of Lufenuron and Flufenoxuron, respectively and 67 % , 80 % was recorded, when treated one–day old of fresh moulting adults by different concs. of Lufenuron and Flufenoxuron, respectively. The metabolic actions of the selected compounds also were evaluated in the present study. Data revealed that application of different IGRs to one – day and six – day old of 5^{th} female and male nymphs decreased the levels of the haemolymph protein in day–8 and day–9 while increased both cholesterol and lipid contents during day–8, and these contents decreased during day–9, prolongation day. Also, the application of Lufenuron and Flufenoxuron resulted in reduced the

number of each sensilla per antenna, when compared with the untreated adult antenna.

ABREVIATIONS

IGRs : Insect growth regulators .
PPM : Part per million .
JH : Juvenile hormone .
JHA : Juvenile hormone analogue .
JHM : Juvenile hormone mimic .
L : Liter .
L:D : Light : Dark .
LD50 : Median lethal dose .
LC 50 : Median lethal concentration .
µl : Microliter .
µg : Microgram .
µm : Micrometer .
gm : gram .
LD : Lethal dose .
ED : Expected dose .
ED50 : Medium Expected dose .
Cm : Centimeter (s) .
SE : Standard error .
min : minute (s) .
Conc . : Concentration .
Hr : Hours(s) .
mm : milimeter .
ml : milliliter .

S. J. H. : Synthetic juvenile hormone .

S.A.S. : Statistical analysis system .

S. gregaria* : *Schistocerca gregaria

LIST OF TABLES