بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها على هذه الأفلام قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار المنافلام بعيدا عن الغبار المنافلام بعيدا عن الغبار المنافلات المنافلات

بعض الوثائـــق الأصليــة تالفـه

بالرسالة صفحات لم ترد بالاصل

STUDIES ON THE EFFECT OF SOME WATER POLLUTANTS ON FRESH WATER PRAWN MACROBRACHIUM ROSENBERGII

THESIS

Submitted in partial fulfillment for the requirements of Master Degree of Science in Zoology

Presented By

KAMILIA MOHAMMED AWAD ASFOUR
B.Sc.Zoology 1999

Zoology Department Faculty of Science Tanta University Tanta, Egypt 2005



STUDIES ON THE EFFECT OF SOME WATER POLLUTANTS ON FRESH WATER PRAWN MACROBRACHIUM ROSENBERGII

THESIS

Submitted in partial fulfillment for the requirements of Master Degree of Science in Zoology

Presented By

KAMILIA MOHAMMED AWAD ASFOUR
B.Sc.Zoology 1999

Zoology Department Faculty of Science Tanta University Tanta, Egypt 2005



To My Dearest Family Father & Mother My Husband & his Mother My Sons Ahmad & Afeef My Sisters & Brothers. My Husband Sisters & Brothers with alot of tha

SUPERVISORS

Prof.Dr./ MOHAMED HASSAN MONA
PROFESSOR OF INVERTEBRATE BIOLOGY
Zoology Department, Faculty of Science
Tanta University

Dr./ EL-SAYED TAHA EL-SAYED RIZK
ASSISTANT PROFESSOR OF INVERTEBRATE BIOLOGY
Zoology Department, Faculty of Science
Tanta University

Dr./ MONA MABROUK TAHA EL- GAMAL ASSISTANT PROFESSOR OF INVERTEBRATE BIOLOGY Zoology Department, Faculty of Science Tanta University

CURRICLUM VITAE

Name in full:

Kamilia Mohammed Awad Asfour

Date of Birth:

26/11/1977

Locality:

El-Mahala -El-Kubra

Qualification: B.Sc.In Zoology (May 1999), with general

grade; Very Good, Faculty of Science, El – Azhar

University.

Attended and passed successfully the postgraduate courses pre-requested for M.Sc. Degree.

کاملیا جمسیعصنر

M. Sc. COURSES STUDIED BY THE CANDIDATE

Beside the work presented in this thesis, the candidate has attended and passed successfully the following postgraduate courses as a partial

fulfillment of the requirements for the Master Degree of Science during the academic year 2000-2001

- 1-Marine Ecology
- 2-Desert Ecology
- 3-Freshwater Ecology
- 4-Biostatistics
- 5-Computer Science
- 6-German Language

Head of Zoology Departmer

Prof. Dr./ Johanned Hassan Mona

ACKNOWLEDGEMENT

First of all Thanks God, The merciful the beneficent for helping me during this work.

I have the greatest pleasure to express my deepest gratitude to **Prof. Dr. Mohamed Hassan Mona**, Professor of Invertebrate Biology, Faculty of Science, Tanta University for his continuous guidance, constructive comments throughout this work as well as final revision of the manuscript, continuous support to achieve an elaborate output.

I would like to express my greatly indebted to **Dr. El-Sayed Taha Rizk**, Assistant Professor of Invertebrate Biology, Faculty of Science, Tanta University for his generous help who devoted much of his time for his laborious effort. I can hardly express my thanks for all what he done.

Many Thanks and appreciation to **Dr. Mona Mabrouk El-Gamal** Assistant Professor of Invertebrate Biology, Faculty of Science, Tanta University for her kind and honest supervision, precious guidance and great care throughout the work and valuable support during the preparation of this work.

I have the greatest pleasure to **Prof. Dr. Mohamed Abd El-Monaim Hegazy**, Head of Zoology Department, Faculty of Science, Tanta University for his constructive providing the departmental facilities and his help.

Many merciful for Prof. Dr. Fatma Ali Abd El-Razek, Professor of Invertebrate Aquaculture, National Institute of Oceanography and Fisherics, Alexandria for her valuable help.

My deepest sincer thanks to Dr. Khadiga Morsy Sharshar, Assistant Professor of Invertebrate Biology, Faculty of Science, Tanta University for her valuable assistance during final preparation of this work.

My sincer thanks to soul Dr. Amal Ibrahim Atlam, Lecture of Comparative Invertebrate, Faculty of Science, Tanta University for her help in preparing the part of the thesis concerned with the histological investigations.

My deepest sincer thanks to Dr. Abd El-wahab Anter Ismail assistant professor of plant pathology Agriculture Research Institute, Giza, for his valuable assistance during final preparation in part of combinations between pesticides and heavy metals in this work.

Many deepest merciful thanks to National Acadmic Science Research, Egypt for its continuous support.

Many thanks for Maryut Fish Farming Company (MFFC) for their guidance and for supplying me with specimens.

Last but not least, I would like to express my grateful thanks for every one who lend me a hand or providing me with support and cardial corporation during this work.



pa	ge
CHAPTER (I): INTRODUCTION AND HISTORICAL REVIE	W
INTRODUCTION	1
HISTORICAL REVIEW	5
CHAPTER (II): MATERIALS AND METHODS	
П-1- Site of collection	22
II-2- Collection of specimens	22
II-3- Collection of water samples	23
II-4- Rearing	26
II-5- Laboratory Experiments	26
II-6- Chemicals and preparation	27
II-6-A- Heavy metals	27
II-6-B- Pesticides	28
II-6-B-1- Saturn	28
II-6-B-2- Romail	29
II-7-A- Toxicity of the investigated heavy meta	ls agains
Macrobrachium rosenbergii	30
II-7-B- Effect of long term exposure of Macrob	rachium
rosenbergii (juvenile) to heavy metals	31

II-7-C- Effect of long term exposure of juvenile
Macrobrachium rosenbergii of the tested herbicic
(Saturn) and fungicide (Romail)32
II-7-D- Long term exposure of Macrobrachium
rosenbergii to LC ₂₅ of pesticides and heavy metal
complex32
II-8- Determination of accumulated levels of the tested
cations on soft parts (gills, hepatopancreas and
muscles) and carapace of adult33
II-9- The histological effect of the cations, pesticides and
their mixtures on the gills, hepatopancreas and
muscles of Macrobrachium
rosenbergii34
II-10- Investigation of the effect of cations and herbicide
(Saturn) on ultrastructure of gills, hepatopancreas
and muscles of Macrobrachium rosenbergii.35
II-11- Systematic and general morphology37
CHAPTER (III): RESULTS
III-1- Determination of lethal concentrations (LC ₅₀ & LC ₉
of the tested pollutants (heavy metals and
pesticides) against Macrobrachium rosenbergii
under standerd laboratory conditions41
III-1- Heavy metals41
III-2- Pesticides49
III-2- Long term exposure of tested pollutants on the
mortality rate of Macrobrachium rosenhergii50