



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





شبكة المعلومات الجامعية



شبكة المعلومات الجامعية

التوثيق الالكتروني والميكرو فيلم

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %



شبكة المعلومات الجامعية



بعض الوثائق الأصلية تالفة



شبكة المعلومات الجامعية



بالرسالة صفحات
لم ترد بالأصل

**MENOUFIYA UNIVERSITY
FACULTY OF MEDICINE
FORENSIC MEDICINE AND
CLINICAL TOXICOLOGY DEPT.**

**DETECTION OF ORGANOPHOSPHATE,
CARBAMATE INSECTICIDES AND MIXTURE
OF BOTH (AN IN VIVO STUDY)**

THESIS

**Submitted for partial fulfillment in Master degree
in Forensic Medicine and clinical toxicology.**

BY

**Ahmed Kamal EL-Fiky
M.B., B.Ch.**

supervised by

Prof. Dr.

Samy Moustafa Badawy

Professor and Head of Forensic Medicine
and Clinical Toxicology Department
Faculty of Medicine, Menoufiya University

Prof. Dr.

Sahar Mohamed Kamel

Professor of Forensic Medicine
and Clinical Toxicology
Faculty of Medicine, Alexandria University

B 95.1
**FACULTY OF MEDICINE
MENOUFIYA UNIVERSITY
1997**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَقُلْ يَا مَعْشَرَ النَّاسِ
سَمِعْتُ رَسُولَ اللَّهِ

صَدَقَ اللَّهُ الْعَظِيمُ



TO MY FAMILY





Acknowledgment

First and forever thanks to ALLAH, the most helpful and beneficent. I would like to express my great appreciation and deepest gratitude to my professor, advisor **Dr. Samy Mostafa Badawy**, vice dean of postgraduate and researchs, professor and chairman of department of forensic medicine and clinical toxicology, Menoufiya university for his advice and help, follow up, guide and throughout the course of this study and encouragement.

I would like to express my deep thanks to professor **Dr. Sahar M. Kamel**, professor of forensic medicine and clinical toxicology, Alexandria university for her kind and help with much advices and sincere support to this work.

I would like to express my deep thanks to our team of poisoning center lab in their help to steps of the research.





Last but not least , I would like to express my deepest
gratitude to all those who have contributed to the completion
of this work.



Contents

* Introduction	1
* Review of literature	1
- Organophosphates	4
- Carbamates	28
- Detection of o.p. & carbamates	39
Sampling	39
Extraction	43
Detection methods	50
* Aim of the work	58
* Materials and methods	59
* Results	69
* Discussion	163
* Summary and conclusion	177
* References	191
* Arabic summary	



INTRODUCTION



Introduction

History of some pesticides

Man from the beginning of time has been victimized by diseases carried by other species; thus he became a host to a variety of vector born diseases.⁽¹⁾

So in his attempt to avoid such conditions ; he created many useful chemicals to control his environment⁽²⁾

About 1880 onwards, most of the materials used for this purpose were simple inorganic compounds such as Arsenic ^(1,2). Then few organic compounds were available and tried such as nicotine derived from plants.⁽¹⁾ By 1930 large industries were built around the discoveries of organic chemistry. In the field of pesticides; among the products that were developed were chemicals called organochlorines; that proved their effectiveness for control of insects, plant diseases and weeds that long plagued man.⁽³⁾ The effective insecticide D.D.T that was developed and directly used to man to control lice during 2nd World War to soliders in trenches.⁽⁴⁾

Later it proved to accumulate in human adipose tissues and act as a carcinogenic⁽⁵⁾ , this lead to severe restriction in its use.⁽⁶⁾

Organo phosphate compounds followed due to increase concern for improving the quality of the environment. They became widely used⁽⁷⁾, later they proved to have a marked mammalian toxicity.⁽⁸⁾

With the increase in production and use of Organo phosphate, the number of people exposed to these compounds has increased.⁽⁹⁾

Millions of pounds of Organo phosphate are used worldwide in commercial farming, gardening, structural Pest management and vector control programmes.⁽¹⁰⁾

There is no assurance that many pests will not in time become resistant to Organo phosphate compounds. A number of species of mites on plants become resistant within a few years.⁽¹¹⁾

This lead to further researches in order to develop less toxic compounds and carbamates came into use.⁽¹²⁾Olga F (90)

Recent History of Pesticides in Egypt :-

After world war II, modern pesticides were introduced in Egypt where the right for D.D.T. production was donated to the Egyptian ministry of public health by the United Nation for its production in 1957.⁽¹³⁾

Newer synthetic pesticides replaced D.D.T. such as Organo phosphate compounds e.g T.E.P.P. (Tetraethylpyrophosphate) and parathion in the fifties, then carbamates came into use afterwards.⁽¹⁴⁾

In the late fifties & sixties parathion became widely used as a domestic insecticide under the trade name Police el Nagda, It was the drug of choice for suicide in many cases.⁽¹⁵⁾

By 1990 Egypt had 7 pesticide production plants for formulation of pesticides, 76% for agriculture usage and 24% for domestic and other uses.⁽¹³⁾

Groups of pesticides commonly used in Egypt :-

The most common groups of pesticides used in Egypt, according to the ministry of agriculture programme are organophosphates, carbamates, some organochlorines excluding D.D.T. and to a lesser extent ;pyrethins.⁽¹⁶⁾