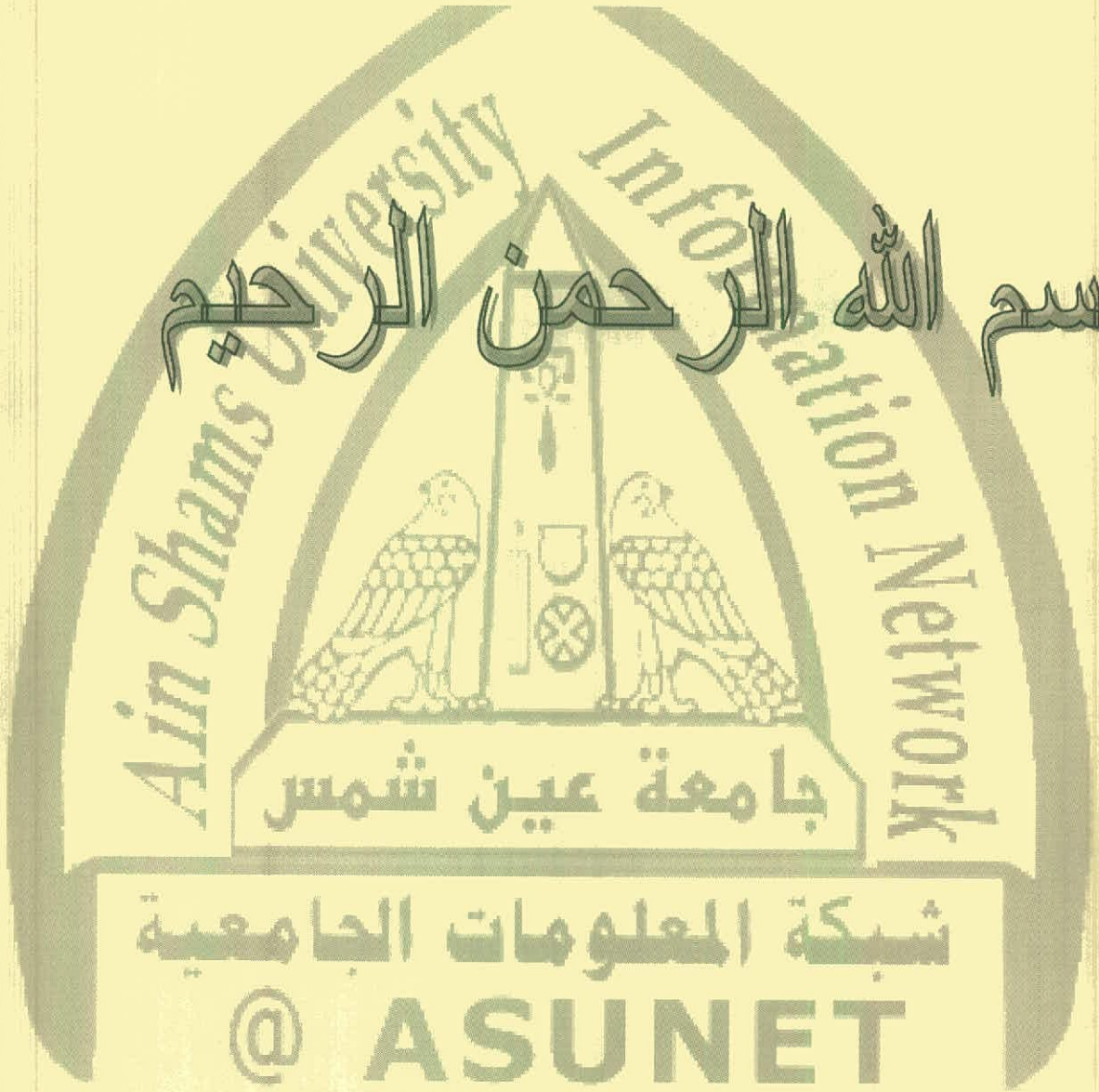
شبكة المعلومات الجامعية



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
علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

بعض الوثائـــــــق الاصليـــــة تالفـــة

بالرسالة صفحات لم ترد بالاصل

Cairo University
Faculty of Veterinary Medicine
Department of Forensic Medicine,
Toxicology and Veterinary Regulations

TOXICOLOGICAL STUDIES ON AN INSECT REPELLENT

Thesis Presented
By

MOHAMED EZZAT MOHAMED EL- SAYYED
(B. V. Sc. Cairo University- 1992)

For the Degree of
M. V. Sc.
(Forensic Medicine, Toxicology and Veterinary Regulations)

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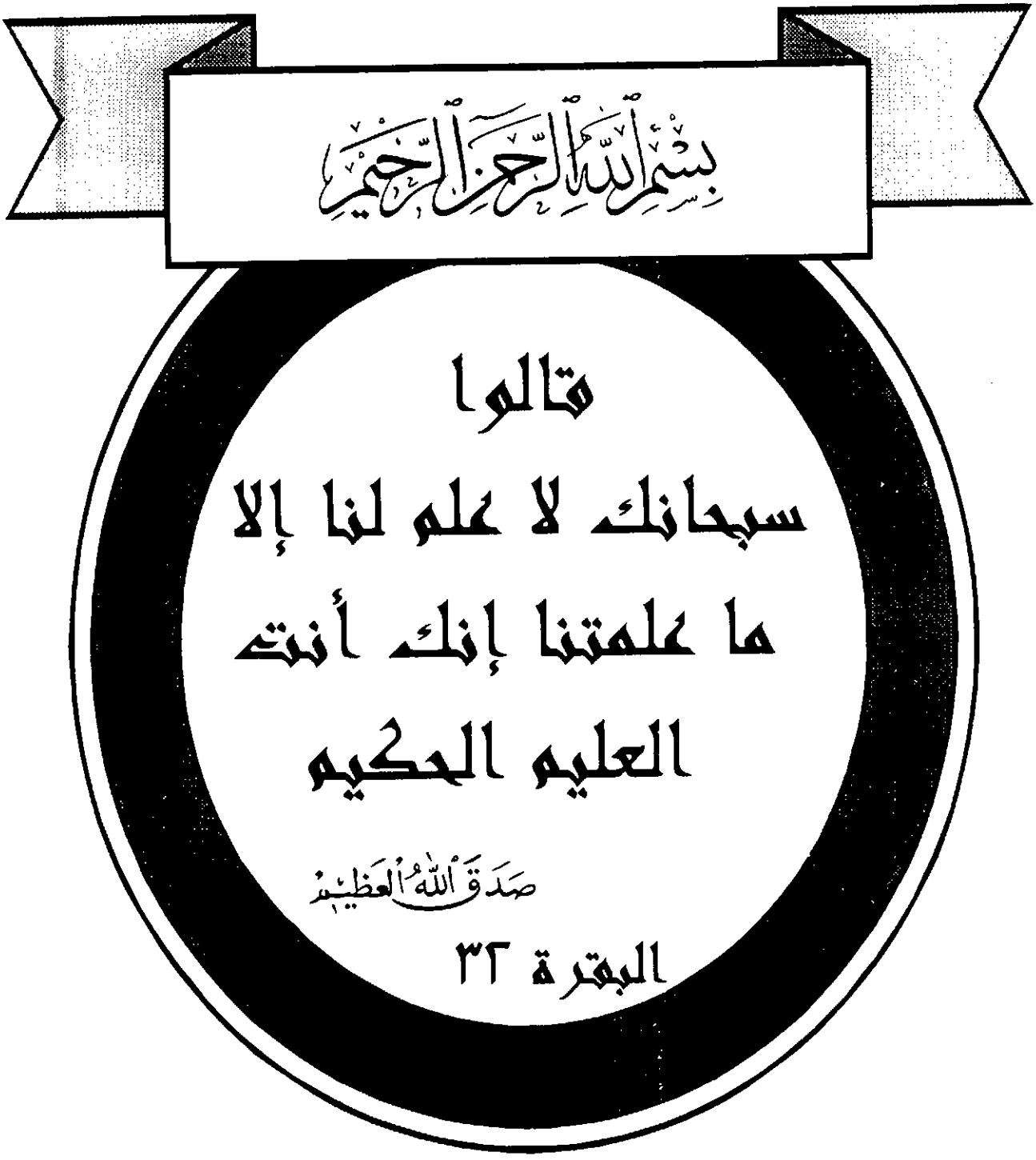
(1996)


بسم الله الرحمن الرحيم
قالوا
سبحانك لا علم لنا إلا
ما علمتنا إنك أنت
العليم الحكيم
صدق الله العظيم
البقرة ٣٢

بسم الله الرحمن الرحيم

جامعة القاهرة

كلية الطب البيطرى

قسم الطب الشرعى والسموم والإجراءات البيطرية

قرار لجنة الحكم والمناقشة

قررت لجنة الحكم والمناقشة ترشيح السيد ط. ب./ محمد عزت محمد السيد المعيد بقسم الطب الشرعى والسموم - كلية الطب البيطرى - جامعة القاهرة لدرجة الماجستير فى العلوم الطبية البيطرية تخصص(الطب الشرعى والسموم).

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INTRODUCTION

INTRODUCTION

Pesticides are used for specific applications; their misuse can result in occupational diseases, destruction of the ecology and significant endangerment to surrounding communities.

Recent estimates suggest that pesticides account for more than 20000 fatalities yearly, and that most of these will have occurred in developing countries. This may actually be a gross under- reporting. A high proportion of pesticide intoxication appear to be due to lack of knowledge, unsafe attitudes and dangerous practice.

The lack of information at all levels may be one of the most important causative factor of chemical intoxication in developing countries. Research should at this time concentrate on behaviors leading to chemical intoxication.

More information should be sought relative to the decision processes of import, legislation and licensing. Research and development efforts in appropriate technology and safety devices are also critically needed. **(Forget, 1991)**.

Briefly, the use of pesticides as well as the use of any potentially injurious chemical substance must take into consideration the balance of the benefits that may be expected versus the possible risk of injury to human health or degeneration of environmental quality **(FAO/WHO, 1981)**.

Radeleff (1970) stated that long - range effects of many pesticides in livestock are still not known or are poorly understood. On the other hand, **Yamanaka et al. (1990)** reported that it is very necessary that the toxicity of industrial chemicals, pesticides, food additives and

pharmaceuticals be assessed so that they are safely handled , transported and used. They advised that information on acute toxicity of chemicals in particular is required as one of the essential criteria to evaluate their safety.

The present generation is only a caretaker of the human genome of future generations **(Malling and Valcovic, 1978)**.

It is important to take genetic hazards in consideration in occupational health studies. Synthetic pyrethroid pesticides, exclusively distributed and used throughout the last four decades, are known to react with DNA and consequently they are recognized as potential mutagens and /or carcinogens. Some pyrethroid compounds were proved to be effective mutagens in a variety of organisms including plants, bacteria , yeast, rodents (mouse, hamster and rat) , insects (*Drosophila*), in addition to cultured human lymphocytes. There is a great deal of scanty and inconclusive results concerning the powerful clastogenic effect of these compounds, with reference to its precise or exact mechanism. This fact implies that more researches are necessary to evaluate the real mutagenic effects of pyrethroid pesticides present in our environment.

Pesticides are among the most widely used chemicals in agriculture. Nowadays, the "pesticide problem" has been the focus of public interest, because they are dangerous to the environment, nature and for animals and human beings. The great hazards caused by these compounds on the livestock are due to their accidental exposure to these pesticides either by inhalation, skin absorption and/or by ingestion.

Field observations attracted the attention to the progressive regression of the productivity of the livestock in coincidence with the unavoidable increased demands of pesticides application. These

observations initiated the interest of investigating the possible detectable drawbacks caused by these pesticides on the fertility levels of male animals. At the mean time, reduced fertility in men occupationally exposed to various pesticides has caused a greater concern **(Espir et al., 1970 and Peck, 1970)**.

Male factory workers occupationally exposed to some pesticides become sterile evidencing oligospermia , high percentage of abnormal spermatozoa, azospermia and genetic damage of germ cells **(Whorton et al., 1977)**.

Pesticide contaminants adversely affect reproductive function both by its direct cellular toxic action and by interfering indirectly with the hypothalamo- hypophyseal control function **(Shternberg and Rybakova, 1968 and Krause, 1977)**.

Aim of Work :

In an effort to evaluate the risk / benefit relations of the pesticides commonly used in Egypt, this work was planned. The objectives of the present study are therefore to authenticate the *in vivo* genetic toxicity potential of class II pyrethroid insecticides, represented by one that has been recently introduced to Egypt, containing cyfluthrin as an active ingredient, named "Bulldock®" , beside its deleterious toxic effects on the male reproductive organs and germ cells , as well as its long- range action on certain blood constituents and tissue cells of some vital organs of the body. The reason lies not only in the protection of the genetic material of future generations, but also in the prevention of malignant diseases in the present populations as well as saving the productivity and general health of our animal wealth.

REVIEW OF LITERATURE