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# شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية

# جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

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# QUALITATIVE AND QUANTITATIVE STUDIES ON AFLATOXINS IN SOME MEAT PRODUCTS

Thesis presented

By

Taghreed Ahmed El -Said Hafez  
(B. V. Sc. Cairo University 1991)


For the Degree of  
M. V. Sc.

(Hygiene & Control of Meat, Fish & their products and animal By-Products)

under supervision of



Prof. Dr. Hosny A. Abd El-Rahman  
Prof. of Meat Hygiene and Faculty Dean  
Faculty of Vet. Med. Suez Canal University

  
Prof. Dr. Makram A. Yassien  
Prof. of Meat Hygiene  
Faculty of Vet. Med.  
Suez Canal University

Prof. Dr. Zeinab M. Niazi  
Chairman of Food Hygiene Depart.  
Animal Health Research Ins.  
Dokki -Giza

Submitted to  
Faculty of Veterinary Medicine  
Suez Canal University  
(1997)

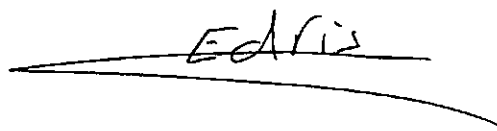
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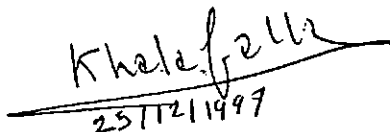
This is to approve that the master thesis by **Taghreed Ahmed El-Said Hafez** to the Suez canal University entitled "*Qualitative and Quantitative Studies on Aflatoxins in Some Meat products*" for the Master degree has been approved in 25/ 12/1997 by the examining committee.

**Signature**

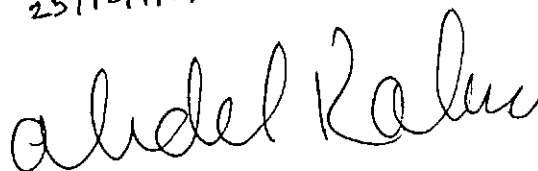
**Prof. Dr. Abou Baker M.F. Edrees**  
Prof. of Meat Hygiene and Control  
Faculty of Veterinary Medicine  
Zagazeg University-Moshtoher

  
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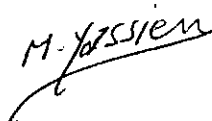
**Prof. Dr. Fathy A. khalaf-Alla**  
Prof. of Meat Hygiene and Control  
Faculty of Veterinary Medicine  
Cairo University-Banisuef

  
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**Prof. Dr. Hosny A. Abd El-Rahman**  
Prof. of Meat Hygiene and Control  
Faculty of Veterinary Medicine  
Suez Canal University

  
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**Prof. Dr. Makram Ahmed Yassien**  
Prof. of Meat Hygiene and Control  
Faculty of Veterinary Medicine  
Suez Canal University

  
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Approved by the Faculty counsel in / /1997

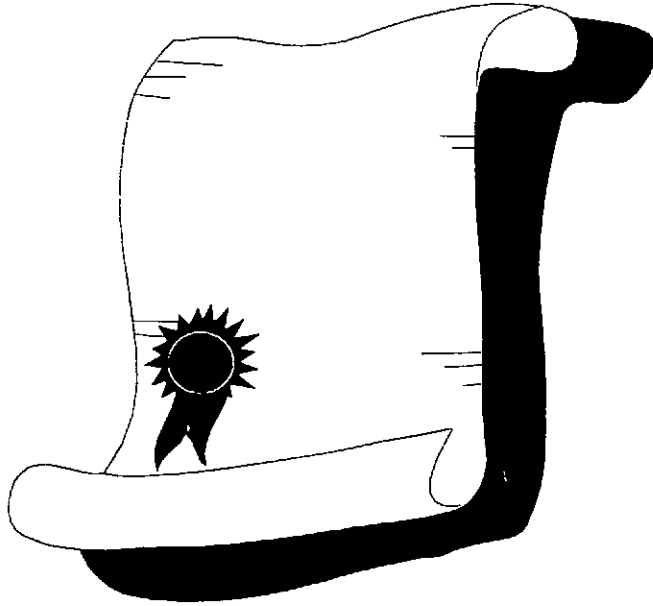
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**"فوق كل ذي علم عليم"**

صدق الله العظيم



## **Dedication**



*Dedicated to .....*

*My Family*

*Taghreed*

## ACKNOWLEDGEMENT

First of all my deep thanks for my **GOD** who gives me the ability to finish this work.. I wish to express my cardinal thanks to **Prof. Dr. Hosny A. Abd El-Rahman**, Prof. of Meat Hygiene and Faculty Dean of Vet. Med., Suez Canal University for his supervision, guidance, and indispensable advice. I wish also to express my sincere gratitude to **Prof. Dr. Makram A. Yassien**, Prof. of Meat Hygiene, Faculty of Vet. Med., Suez Canal University for his supervision and helpful advice.

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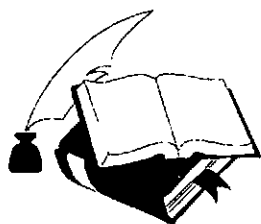
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# INTRODUCTION

# 1-Introduction

Fungi must be of major concern to the producers and processors of meat. It can compete effectively with bacteria and become the dominant microflora when meat - preservation techniques such as drying curing and freezing are employed.

Fungi can cause three basic types of diseases, mycosis, allergy and mycotoxicosis. A mycosis is defined as an invasion of living tissue by fungi, while an allergy is a hypersensitivity to a fungal antigen. A Mycotoxicosis is a toxic manifestation resulting from ingestion or exposure to a fungal metabolites

Mycotoxicosis is of major concern in the consumption of meat, because mycotoxins have the potentiality to enter meat and meat products either by indirect carry over from animal feed to edible tissue or by direct fungal growth on meat.

Toxigenic fungi are ubiquitous and can grow in various agricultural commodities in the field, or appear post harvest during storage and processing. Production of mycotoxins by Toxigenic fungi is not simply concurrent with growth but is dependent on the temperature , relative humidity and moisture content of the substrate

However, fungi colonize meat and its products, resulting in economic losses during storage, moreover some molds have been found to produce such highly toxic metabolites ( mycotoxins)

Many mycotoxins have been discovered because they are incriminated as the causative agent of toxicosis in livestock and poultry .In such events a fungus is isolated from feed associated with an animal toxicosis of unknown etiology and the organisms experimentally showed to produce factors which are toxic to test laboratory animals. The toxicology of many of the purified mycotoxins have been studied ,based on these investigations and human epidemiological evidence, potentially harmful effects of mycotoxins are sometimes extrapolated to man.

Mycotoxins, which are of the greatest possible significance to meat, are the aflatoxins, ochratoxins, zeralenon and trichothecenes. One of these compounds, aflatoxin B<sub>1</sub>, is the most potent liver carcinogen known ( Pestka, et al 1980 ).

Mycotoxins may be present in meat as tissue residues carried over from contaminated feeds or as a direct result of mould growth .It has been experimentally established that low levels of mycotoxins and their metabolites are carried over from feeds to the edible tissues of food - producing animals ( Richard *et al* . 1983)