بسم الله الرحمن الرحيم

∞∞∞

تم رفع هذه الرسالة بواسطة / حسام الدين محمد مغربي

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات : لا يوجد

Cairo University
Faculty of Veterinary Medicine
Department of Poultry Diseases

Effect of Mycotoxins on the Clinicopathological and Immunological Picture in Broilers Infected with Some Pathogenic *E. coli* Strains with Special References to Prevention and Control

A Thesis Presented by

Mohamed Mohamed Ismail Batikh
(B.V.M.Sc., Fac. Vet. Med., Kafr El-Shiekh University, 2011
M.V.SC, Fac. Vet. Med., Cairo University, 2018)

To
Cairo University
Faculty of Veterinary Medicine
For the Degree of Ph.D. in Veterinary Medical Sciences
(Poultry diseases)

Under supervision

Prof. Dr. Anwaar Metwally Elnabrawy
Emeritus Prof. of Poultry Diseases
Faculty of Veterinary Medicine
Cairo University

Prof. Dr. Mohamed Abd El-Salam Shakal
Emeritus Prof. of Poultry Diseases
Faculty of Veterinary Medicine
Cairo University

Dr. Eman Anter Morsy
Associate Professor of Poultry Diseases
Faculty of Veterinary Medicine
Cairo University

Dr. Abd -Elhaleem Mohamed Hegazy
Emeritus chief Researcher of Poultry Diseases
Animal Health Research Institute
Kafr El-sheikh provisional lab

2022

CAIRO UNIVERSITY

Cairo university

Faculty of Veterinary Medicine

Approval sheet

This is to approve that, the dissertation presented by:

Mohamed Mohamed Ismail Batikh

Submitted to **Cairo University**

Entitled: **Effect of mycotoxins on the clinicopathological and immunological picture in broilers infected with some pathogenic *E.coli* strains with special references to prevention and control.**

For the degree of **PH.D. (Poultry diseases)**

Has been **approved by the examining committee:**

Prof. Dr. Amal Hassan Tawfik Abd El-Nasser

Prof. of poultry diseases. *Fac. Vet. Med. Banha University.*

Prof. Dr. Mostafa Ahmed Bastami

Prof. of poultry diseases. *Fac. Vet. Med. Cairo University*

Prof. Dr. Anwaar Metwally Elnabrawy

Prof. of poultry diseases *Fac. Vet. Med. Cairo University* **(Supervisor)**

Prof. Dr. Mohamed Abd El-Salam Shakal

Prof. of poultry diseases *Fac. Vet. Med. Cairo University* **(Supervisor)**

Dr. Eman Anter Morsy

Associate professor of poultry diseases, *Fac. Vet. Med. Cairo University* **(Supervisor)**

(28/3/2022)

Cairo University
Faculty of Veterinary Medicine
Department of Poultry Diseases

SUPERVISION SHEET

Effect of Mycotoxins on the Clinicopathological and Immunological Picture in Broilers Infected with Some Pathogenic *E. coli* Strains with Special References to Prevention and Control

A Thesis Presented by

Mohamed Mohamed Ismail Batikh

To

Cairo University
Faculty of Veterinary Medicine
For the Degree of Ph.D. in Veterinary Medical Sciences
(Poultry diseases)

Under supervision

Prof. Dr. Anwaar Metwally Elnabrawy
Emeritus Prof. of Poultry Diseases
Faculty of Veterinary Medicine
Cairo University

Prof. Dr. Mohamed Abd El-Salam Shakal
Emeritus Prof. of Poultry Diseases
Faculty of Veterinary Medicine
Cairo University

Dr. Eman Anter Morsy
Associate Professor of Poultry Diseases
Faculty of Veterinary Medicine

Cairo University

Dr. Abd -Elhaleem Mohamed Hegazy
Emeritus chief Researcher of Poultry Diseases
Animal Health Research Institute
Kafr El-sheikh provisional lab

2022

Cairo University
Faculty of Veterinary Medicine
Department of Poultry Diseases

Name: Mohamed Mohamed Ismail Batikh
Nationality: Egyptian
Degree: Ph.D. 2022
Specification: Poultry Diseases
Supervisors:
Prof. Dr. Anwaar Metwally Elnabrawy
Prof. Dr. Mohamed Abd El-Salam Shakal
Dr. Eman Anter Morsy
Dr. Abd -Elhaleem Mohamed Hegazy

Thesis title: "Effect of Mycotoxins on the Clinicopathological and Immunological Picture in Broilers Infected with Some Pathogenic *E. coli* Strains with Special References to Prevention and Control"

ABSTRACT

Mycotoxins are considered as toxic, active metabolites that constitute a major problem in poultry industry in Egypt as it has a hazard effect on immune response that leads to increase the pathogenicity of other infective agent besides its effect on antibiotics pharmacokinetic. Four hundred and twenty day old chicks were used to study the effect of naturally mycotoxin contaminated diet on the clinicopathological picture and immunological profile in broiler infected with *E.coli* in addition to its effect on Fluorophenicol absorption, metabolism and excretion. The chicks were allotted into 5 groups. The first 3 groups were further equally subdivided to 2 subgroups A and B each of them was of 30 chicks. The A groups were fed on ration treated with antimycotoxin while the B groups were fed on ration contaminated with mycotoxins. The first 3 groups were inoculated with *E. coli* O_{78}, O_{128} and O_{157} respectively using a dose of $1.5x10^8$/ chick at day old while the groups 4 and 5 were consisted of 120 chicks and kept on mycotoxin treated diet and mycotoxin contaminated diet as –ve and +ve control. On day 17 the control -ve were subdivided into 1A, 2A, 3A and –ve control while the +ve group were subdivided to 1C, 2C, 3C and +ve control. The first 3 subgroups of group 4 and 5 were inoculated with *E. coli* O_{78}, O_{128} and O_{157} respectively then these subgroups furtherly subdivided to Fluorophenicol treated and untreated groups.

The results showed high mortality, sever clinical signs, bad feed conversion rate, depraved cellular and humeral immune response and sever histopathological changes in all groups fed on ration contaminated with mycotoxin. Mycotoxicated groups showed lower rate of FF in serum and higher rate of FF in liver and kidney than the free groups were measured through HPLC.

Keyword: Mycotoxin, *E. coli*, Clinicopathological, Immune Profile, FCR, Histopathology, Fluorophenicol, HPLC, Pharmacokinetic

Dedication

I want to give this message to the souls of my father and mother, from whom I have learned so much and continue to be a guide in my life, my family has been a source of encouragement and inspiration throughout my life, and actively supported me to discover and realize my potential and contribute to our world.

ACKNOWLEDGEMENT

All praise and glory to Almighty ***Allah (Subhanahu Wa Taalaa)*** *who gave me courage and patience to carry out this work. Peace and blessing of Allah be upon last Prophet Muhammad (Peace Be upon Him).*

I would like to express my appreciations and gratitude to ***Prof. Dr. Anwaar Metwally Elnabrawy*** *Emeritus Professor of poultry diseases Faculty of Veterinary Medicine Cairo University for her supervision, helpful advice, continuous encouragement and guidance throughout this work.*

Grateful thanks and sincere gratitude are also, to ***Prof. Dr. Mohamed Abdel-salam Shakal*** *Emeritus professor of poultry diseases Faculty of veterinary medicine Cairo University, for his supervision*

I am very much thankful to ***Dr. Eman Anter Morsy,*** *associate professor of poultry diseases Faculty of veterinary medicine Cairo University, for her supervision, helpful advice, continuous encouragement and guidance throughout this work*

My deepest appreciation and sincere gratitude to ***Dr. Abd Elhaleem Mohamed Hegazy*** *Emeritus Chief researcher, of Poultry diseases, Animal Health Research Institute for his supervision, helpful advice, and guidance throughout this work.*

I am very much thankful to ***mycotoxin research lab*** *under supervision of* ***Prof. Dr. Anwaar Metwally Elnabrawy*** *as it partially supported this study.*

I am very thankful to ***Dr. Khaled Madian Ahmed associate*** *Professor at Poultry Diseases Faculty of Veterinary Medicine, Cairo University for reviewing paper 2*

I am also hugely appreciative to ***Dr. Waleed sobhy,*** *associate professor of pathology faculty of veterinary medicine Kafr Elshiekh University so willingly, and for being so dedicated to completion of the histopathological examination.*

LIST OF CONTENTS