



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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التوثيق الإلكتروني والميكرو فيلم



شبكة المعلومات الجامعية التوثيق الإلكتروني والميكرو فيلم



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قسم

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Residual Microbial Contamination and Biofilm Formation in Poultry Houses

Thesis Presented by

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(Bachelor Degree of Veterinary Medical Science, 2017)

Faculty of Veterinary Medicine

Cairo University

For

The Degree of Master in Veterinary Medical Sciences
Hygiene of Animal, Poultry and Environment

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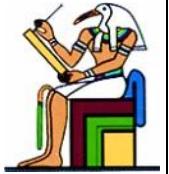
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Abstract

In order to ensure healthy environment for poultry, cleaning and disinfection should not be overlooked throughout production process. Few studies have examined the hygienic status of broiler house surfaces, e.g. cooling pads, floor and fan dust prior to and after disinfection. The microbiological status (water-borne and air-borne microorganisms) in four chicken broiler houses located in Giza governorate housing complex was examined throughout the growing period and after disinfection in this study. Total colony counts, coliforms, *pseudomonas*, yeast, and fungi counts were conducted. This was followed by isolating and identifying airborne and waterborne fungal species. Twenty-seven samples were collected on the following days (7th, 21st, and 31st) from the water source and water lines using sponge sticks. Moreover, 150 grams of dust samples were collected at different points from fan blades and the floor in different parts of each house. Residual microorganisms were counted 24 hours after disinfection by collecting 18 surface swabs from water lines, floors, and fans for each house. The microbial load in dust and water samples increased rapidly as the flock grew. Bacterial colonies were more prevalent at the entrances to water lines than at their ends, the counts from the floor were higher than those from fans.

Seven fungal species belonging to five different genera were isolated (*Aspergillus flavus* (100%), *Aspergillus niger* (100%), *Aspergillus fumigatus* (87.5%), *Mucor* sp. (87.5%), *Penicillium* sp. (75%), *Fusarium* sp. (37.5%), while *Dematiaceous* sp. (25 %)). A total of twenty bacterial isolates were found (from dust, cooling pads, and water); the bacteria are *K. pneumoniae*, *P. aeruginosa*, *Proteus mirabilis*, and *E. coli*. Following disinfection, all microorganism counts declined significantly. The biofilm-forming ability of bacteria was determined by identifying, isolating, and testing microbial residues. Biofilm production was moderate in about 45% of the isolates. Usually, biofilms are mixed communities of the above microbe groups; thus, they may be harmful to animals during subsequent production cycles.

Key words: Broiler farm, bacterial and fungal contamination, cooling pads, dust, drinking water system, biofilms, Disinfection.



Dedication

*I would like to dedicate this work
to my kind parents,
My dear brother
and lovely sisters.*

Acknowledgments

*First of all, I would like to express my prayerful gratitude and great thanks to the merciful **ALLAH**.*

*My respect, good gratitude and highest appreciation to **Prof. Dr. Sherif Tawfik Mubarak** Professor and head department of Animal, poultry and Environmental Hygiene, Department of Veterinary Hygiene and Management, Faculty of Veterinary Medicine Cairo University for his elaborative supervision and support throughout this work,*

*I am extremely grateful to **Dr. Hanan Saad Khalefa** Lecturer of Animal, poultry and Environmental Hygiene, Department of Veterinary Hygiene and Management, Faculty of Veterinary Medicine, Cairo University for her kind supervision and valuable advice and assistance.*

*It is a great pleasure to record my deep and great thanks to **Dr. Mahmoud Mehani** lecturer of Aquatic Animals Medicine and Management, Faculty of Veterinary Medicine, Cairo University for his help in statistical analysis, advice and support.*

I would like to thank all staff members of the department of Animal, poultry and Environmental Hygiene for their encouragement and kind support during this work,

