بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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التوثيق الإلكتروني والميكروفيلم

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)
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The Degree of Master in Veterinary Medical Sciences

Hygiene of Animal, Poultry and Environment

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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 (7^{th}, 21^{st}, and 31^{st}) 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.

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