

## DEDICATION

To my mother,  
sisters and  
brothers and  
sincerely to my  
wife (joya)

## **ACKNOWLEDGMENTS**

Above all, praise is to my almighty Allah for giving me a good health, wisdom, ability, and strength to carry out this work and for all other graces.

I would like to express my deep and sincere gratitude and appreciation to my supervisor Prof. Dr. Mohamed Abdelsallam Abdalla, Department of Preventive Medicine and Public Health of the College of Veterinary Medicine, Sudan University of Science and Technology for his excellent guidance, support, and constant encouragement throughout this project and also for his invaluable assistance and instructions, without which, it would not have been possible to accomplish this project and for reading and correcting the manuscript.

I am also indebted to Dr. Yassir Adam Shuaib, of College of Veterinary Medicine, University of Science and Technology for his kind assistance and I would like to thank him very much.

I would like to express my sincerest appreciation and deepest thank to the staff of the Department of Pathology, Microbiology and Parasitology and to the staff of Microbiology Laboratory for their significant contribution and providing scholarship, without which it would not have been possible to accomplish this project.

Finally, I am thankful to my beloved mother, wife, sisters and brothers, and to all my friends for their everlasting support.

## Abstract

The purpose of this study was to evaluate the potential contaminating microorganisms at farm level before slaughtering process in broiler poultry farm. The study was conducted in two broiler chicken farms in 2011 in Khartoum state. Hundred swab samples were collected; the samples were taken from litter, chicken transport boxes and rinse water coops, cloaca, feathers and breast supports. The total viable count and the culture methods were applied for isolation and identification of microorganisms.

The study revealed a statistically significant difference at *P-value* ( $p \leq 0.05$ ) between the investigated Critical Control Points CCPs, the TVC revealed the highest contamination level recorded was in cloacal swabs  $9.98 \pm 0.01 \log_{10} \text{CFU/cm}^2$  while the lowest contamination level recorded was in coops swabs  $2.76 \pm 0.11 \log_{10} \text{CFU/cm}^2$ . Isolation and identification of bacteria at different operational points under investigation revealed 4 species of bacteria as. Litter was *Staphylococcus aureus* and *Staphylococcus albus* (8.33%), cloaca was *Escherichia coli* (8.33%) and *Salmonella* (8.33%), feathers *Escherichia coli* (8.33%) and *Staphylococcus aureus* (8.33%), transport coops *Escherichia coli* (16.66%), coop rinse water *Staphylococcus*

*aureus* (16.66%), and chicken breast supports *Escherichia coli* (8.33%) and *Staphylococcus albus* (8.33%).

It was concluded that the levels of microbial contamination in broiler chicken farms may reflect the hygienic status of poultry meat production. Bacterial contamination on processed broiler carcasses may originate from environment, plant equipments and employees.

## الملخص

كان الغرض من هذه الدراسة التعرف علي أماكن مصادر حدوث التلوث البكتيري قبل الذبح في مزرعة حديثة للدجاج اللاحم وقد أجريت الدراسة في عام 2011 في ولاية الخرطوم. تم جمع مئة عينة مسحة، أخذت هذه العينات من الزرق، أقفاص نقل الدجاج، ماء غسيل الاقفاص، مهاد النشارة، الريش ودواعم الصدر في المجزر الآلي. تم تطبيق العد الحي الكلي وطريقة الزراعة البكتيرية لعزل وتحديد الاحياء الدقيقة.

أوضحت الدراسة ان هناك فرق معنوي بين هذه النقاط ( $p \leq 0.05$ ) بعد العد الحي الكلي بين نقاط التحكم الحرجة المفحوصة ، أثبت العد الحي الكلي كشفت أن أعلى مستوى تلوث سجل في عينات مسح المجمع ( $0.01 \log_{10} \text{CFU} / \pm 9.98$ )  $\text{cm}^2$ ، في حين أن أدنى مستوى تلوث كان في أقفاص ترحيل الفراخ ( $\pm 2.76$ )  $\text{cm}^2$ ، كشف عزل وتصنيف البكتيريا من النقاط قيد التحقيق عن أربعة أنواع من البكتيريا، حيث عزل من الزرق المكورات العنقودية الذهبية والمكورات العنقودية البيضاء بنسبة 8.33%، وعزل من المجمع الإشريكية القولونية بنسبة 8.33% والسالمونيلا بنسبة 8.33%، وعزل من الريش الإشريكية القولونية 8.33% والمكورات العنقودية الذهبية بنسبة 8.33%، في عينات أقفاص الترحيل الإشريكية القولونية بنسبة 16.66%، في مياه غسيل اقفاص الترحيل تم عزل المكورات العنقودية الذهبية بنسبة 16.66%، وفي مسحات دواعم صدور الدجاج بالمجزر الآلي عزلت الإشريكية القولونية بنسبة 8.33% والمكورات العنقودية البيضاء بنسبة 8.33%.

نخلص إلى أن مستوي التلوث الجرثومي في مزارع الدجاج اللاحم قد يعكس الحالة الصحية في انتاج لحم الطيور. بجانب التلوث الجرثومي يمكن ان ينشأ من بيئة المزرعة، معدات المجزر الآلي بالاضافة لعمال المجزر.

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