

Sudan University of Science and Technology

Collage of Graduate Studies

**Study on the Chemical Composition, Nutritive Value and
Safety of rendered Animal and Poultry by-products in
Khartoum state**

**دراسة التركيب الكيميائي والقيمة الغذائية والسلامة لمخلفات
الحيوانات والدواجن المعالجة (ولاية الخرطوم)**

**A Thesis submitted in fulfillment for the
Requirements of the Degree of Master in
Animal by-products Animal Rendering
Technology**

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

الإية

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قَالَ تَعَالَى:

﴿يَأْتِيهَا الَّذِينَ ءَامَنُوا إِذَا قِيلَ لَكُمْ تَفَسَّحُوا فِي الْمَجَالِسِ فَأَفْسَحُوا يَفْسَحَ اللَّهُ لَكُمْ ^ع وَإِذَا قِيلَ انشُرُوا فَانْشُرُوا يَرْفَعُ اللَّهُ الَّذِينَ ءَامَنُوا مِنْكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ ^ج وَاللَّهُ بِمَا تَعْمَلُونَ خَبِيرٌ ﴿١١﴾﴾

سورة المجادلة (11)

Dedication

To my mother

To my father

To my husband

Acknowledgement

My thanks and praise to almighty Allah, the most beneficent, the merciful , for giving me health and strength to accomplish this work .then I wish to express my indebtedness and sincere to my supervisor Professor .Doud Elzubair for his keen guidance ,valuable assistance, advice and encouragement .Indeed his generous help and support is greatly appreciated Also I wish to express my kind regard and thanks to Dr Ebtesam Ali .And thanks to Dr sana ,Anas, and safia. Thanks are also extended to Technicians in department of microbiology in Sudan University Science and Technology and animal nutritional lab (Kuku)

Abstract

This study was carried out to investigate the chemical composition, nutritive value and safety of rendered animal and poultry by – products (fifteen) samples of meat meal were collected from different animal and poultry slaughter houses in Khartoum state from January 2017 to December, 2017 . The samples were rendered (dry rendering method).and subjected to chemical analysis and cultured for bacterial load and to identify the contaminant organism. Chemical analysis of rendered animal by- products showed that moisture content was 11.56%, fat content was 11.56, protein content was 59.72%, and ash content was 17.39%. The Chemical composition of poultry by – products moisture content was 10.56, fat content was 10.56%, protein content was 65.17%, and ash content was 13.83%. The total bacterial count in rendered animal by-products ranged from 5.66×10^5 to 5.86×10^5 . The total bacterial count in rendered poultry by-products ranged from 4×10^5 to 5×10^5 . The contaminant bacteria in rendered animal and poultry by-products which were characterized according to their morphology and biochemical reaction were salmonella *sp.* and E .coli *SP.*

ملخص الدراسة

إجريت هذه الدراسة في الفترة من يناير 2017 الى ديسمبر 2017 داخل ولاية الخرطوم لمعرفة القيمة الغذائية والسلامة الصحية لمخلفات الحيوانات ومخلفات الدواجن المعالجة بالطريقة الجافة. تم أخذ خمس عشرة عينة من مخلفات مسالخ الحيوانات والدواجن. وتمت معالجته بالطريقة الجافة. أظهرت نتائج التحليل الكيميائي في مخلفات الحيوانات المصنعة بعد المعالجة الرطوية %11.56, الدهن % 11.56, البروتين % 59.72 والرماد % 17.39 بينما القيمة الغذائية لمخلفات الدواجن المصنعة بعد المعالجة الرطوية % 10.56, الدهن % 10.56, البروتين % 65.17 والرماد % 13. . العد البكتيري في مخلفات الحيوانات المعالجة يتراوح بين $10^5 \times 5.66$ الى $10^5 \times 5.86$. العد البكتيري في مخلفات الدواجن المعالجة يتراوح بين $10^5 \times 4$ الى $10^5 \times 5$. أظهرت نتائج التزريع أن البكتريا الملوثة في مخلفات الحيوانات والدواجن شملت السالمونيلا والايكولاي.

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