

**BUSITEMA  
UNIVERSITY**  
*Pursuing Excellence*

**ASSESSMENT OF BACTERIAL CONTAMINATION IN BEEF FROM THE  
SLAUGHTER SLAB, ABATTOIR AND BUTCHERIES OF AMURIA TOWN  
COUNCIL, AMURIA DISTRICT.**

**BY**

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July-August 2024

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**A RESEARCH DISSERTATION REPORT SUBMITTED TO THE FACULTY OF  
AGRICULTURE AND ANIMAL SCIENCES IN FULFILMENT OF THE  
REQUIREMENTS FOR AWARD OF A BACHELOR IN ANIMAL PRODUCTION  
AND MANAGEMENT OF BUSITEMA UNIVERSITY**

## **ABSTRACT**

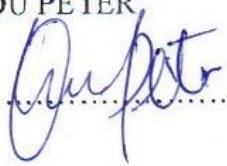
Assessment of bacterial contamination in beef from the abattoir, slaughter slab and butcheries of Amuria town council was conducted with objectives of finding out the dominant contaminating bacteria in beef and to find out the hygienic practices that could be contributing to beef contamination. This research study employed both qualitative and quantitative approaches where a cross-sectional design was used to randomly collect a total of 60 samples from the abattoir, slaughter slab and butcheries for microbial lab analysis. An observation checklist was used during the study to document the hygiene status of this beef supply chain. The results of this study were analysed using B-SOP 1 procedure and it was found out that *E. coli* was the dominant (66.7%) contaminant in all the three locations i.e. abattoir, slaughter slab and butcheries. *E. coli* contamination in beef was found more co-existent with *Salmonella* (20%) than *Shigella* (13.3%). However, the percentage of *E. coli* was the highest in the butcheries (80%) and lowest in the slaughter slab (50%). *E. coli* & *Salmonella* contamination was higher in the slaughter slab (30%) but had similar contamination level in the abattoir and butcheries (15%) respectively. *E. coli* & *shigella* contamination was the highest in the slaughter slab (20%) and lowest in the butcheries (5%). The results of this study based on the chi-square analysis at 5% level of significance indicated that there was no significant difference in contamination across the abattoir, slaughter slab and butcheries for *E. coli*, *salmonella* and *shigella* as all the chi-square values were below the critical value of  $\chi^2 = 3.841$ . This suggest that the poor handling and hygiene practices observed in this study may be widespread across the entire beef supply chain. Basing on these findings, its recommended that regular microbial examination be conducted in the high risky places of the supply chain such as butcheries, slaughter slab and that there should be implementation of strict hygiene and beef handling protocols through the entire beef production and supply chain.

## **DECLARATION**

I Eyou Peter declare that the work in this report is from my personal output and has never been submitted for any academic award in any institution of higher learning.

Name: EYOU PETER

Signature.....



Date.....

01 / 11 / 2024

## APPROVAL

This research report was written under my supervision and I have reviewed its adherence to the required academic and research guidelines of Busitema University.

Name: Prof. OLILA DEO

Signature.....

Date.....

4/11/2014

## **DEDICATION**

I dedicate this research report to God my heavenly provider whose greatest love and kindness enabled me reach up to this date.

## **ACKNOWLEDGEMENTS**

I would like to express my deepest gratitude to my dear parents, Mr. Odeng Bosco and Mrs. Akiror Mary for their financial support and encouragement throughout the three years of my academic journey. I would like to greatly appreciate my supervisor Prof. Olila Deo and the team of senior lecturers from the Animal Department of Arapai campuss for their invaluable and dedicated guidance in ensuring that this research dissertation report reaches this level. I congratulate the team of specialized scientists from NADDEC Entebbe who offered me technical advice and guidance during the laboratory research analysis. Lastly, I would like to thank the management of Amuria Town Council for accepting me to successfully conduct this research study to its completion. May God bless all of you abundantly.

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## **ABBREVIATIONS**

FAO – Food and Agriculture Organisation

WHO- World Health Organisation

e.g – for example

etc – and so on

i.e – that is to say

CDC – Centre for Diseases Control and Prevention

FSA – Food Science Agency

DVO – District Veterinary Officer

JFP – Journal of Food Protection

URN- Uganda Radio Network

# **CHAPTER ONE**

## **1.0 Introduction**

### **1.1 Background to the study**

The population in Africa is predicted to triple by 2050 and it's believed that there will be increased purchasing power by consumers of animal products. In Uganda for example, the population is projected to increase to more than 100 million by 2050 and consumption of all types of meat will almost triple (FAO, 2018).

Beef is an important source of proteins and essential nutrients consumed worldwide. However, the meat industry faces significant challenges in ensuring the safety of meat products whereby contamination is a major risk problem. Bacteria such as Escherichia coli, Salmonella and Listeria monocytogenes are beef pathogens and can cause serious harm to consumers if not properly controlled (Havelaar et al., 2015).

According to the World Health Organisation, foodborne illnesses are a major public health problem caused by food contamination globally with an estimated 600 million cases and 420,000 deaths due to foodborne illnesses each year. These figures demonstrate that there is need for urgent implementation of effective measures to prevent and control contamination in food products such as beef (WHO, 2015).

In Africa, meat contamination poses a serious significant health problem where food safety infrastructure and resources may be limited. Research has shown that the main cause of illness in meat products in African have been attributed to inadequate slaughter houses and lack of refrigeration houses for meat. The impact of these challenges is significant because they can cause foodborne illnesses and impact public health. (Nychas et al., 2008).

In Uganda with the population that heavily relies in beef as a primary protein source, the issue of bacterial contamination in beef is a critical concern. Research shows that beef products sold in supermarkets and shops have varying levels of contamination raising concerns about the efficiency of current measures to protect consumers from food contamination.

The presence of pathogens in beef not only affects the health of consumers but also creates uncertainty about the reputation of the Uganda's meat industry affecting trade and

## REFERENCE LIST AND APPENDICES

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