



**BUSITEMA
UNIVERSITY**
Pursuing Excellence

**DETERMINATION OF OXYTETRACYCLINE
CONCENTRATIONS IN FRESH BEEF SOLD IN MBALE CITY,
EASTERN UGANDA.**

BY

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**This Dissertation is submitted to the faculty of agriculture and animal sciences
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ABSTRACT

Oxytetracycline is one of the antimicrobial drugs used for prophylactic treatment of different livestock diseases. These microbial drugs are used indiscriminately and this has attributed to accumulation of their residues within the food of animal origin. Man is exposed to these different drug residues through consumption of these contaminated animal products like beef and milk. Drug residues are determined within these animal products by use of different methods such as physio-chemical analysis for example LC/MS and HPLC, and immunological methods like ELISA. The study aimed at producing baseline data about the concentrations of oxytetracycline residues in raw beef sold in Mbale city, Eastern Uganda and compared their concentrations with the international acceptable maximum limits F.A.O/W.H.O. A cross sectional study was done and 30 samples i.e. 10 liver samples, 10 kidney samples and 10 liver samples were collected randomly once from different butcher points in Mbale city. They samples were transported to Wandegeya analytical laboratory for analysis. Out of the 10 samples of liver, 7 contained oxytetracycline residues. For the case of muscles samples, only 5 out of the 10 contained oxytetracycline residues and for kidneys, 7 out of the 10 samples contained tetracycline residues. The detected concentrations were higher than their respective F.A.O/W.H.O recommended maximum limits 200 µg/kg in the muscles, in the kidney is 1200 µg/kg and within the liver its, 600 µg/kg. This was attributed to failure to observe the withdraw periods of these antimicrobial drugs and also indiscriminate usage of these drugs. The findings showed a lower proportion being negative with a percentage of 33.3% (no oxytetracycline residues were contained within them) and a higher proportion of samples were positive with a percentage of 63.3% (samples contained oxytetracycline residues) above their recommended limits. There was no significant difference between the different samples collected from the various butcher points within Mbale city, Eastern Uganda. The study recommended public awareness about presence of these drugs residues within the animal food products which has health effects. It also recommended continuous assessment and monitoring of these drug residues within beef produced from Mbale city and Uganda at large.

DECLARATION

This dissertation is my own work and has never been submitted to any institution for assistance or award for any academic qualification or academic credit

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APPROVAL

This dissertation report has been submitted with approval of my Academic supervisor,

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DEDICATION

I dedicate this thesis to my dear wife Ms chekwemboi Sarah and children Cherop Joy Keila and Chemutai jolly Nemah, for their academic support and prayers during my research process. May the almighty God bless them abundantly?

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ABBREVIATIONS

HPLC	High Performance Liquid Chromatography
LC/MC	Liquid Chromatography and Mass Chromatography
F.A.O	Food for Agricultural Organization
W.H.O	World Health Organization
O.T.C	Oxytetracycline
Dr.	Doctor
MRL	Maximum Residue limits
LAB	Laboratory