



**BUSITEMA
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Pursuing Excellence

**ASSESS THE EFFECT OF SANITATION ON POST-HARVEST LOSSES IN FRESH NILE
TILAPIA AT GGABA FISH MARKET, KAMPALA CITY UGANDA.**

BY

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ENVIRONMENTAL SCIENCES IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF A BACHELOR IN FISHERIES AND
WATER RESOURCES MANAGEMENT.**

@2024

DECLARATION

I Ngabire Allan confirm that the work presented in this dissertation is original of my work and it has neither been produced nor copied to any institution of higher learning for any award.

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APPROVAL

This dissertation has been submitted to Busitema University with my approval as the University student`s supervisor.

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Date.....

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DEDICATION

I would like to dedicate this report to my family members for emotional and financial support. I also dedicate this report to my research supervisor Dr. Chloe Kemigabo (PhD) and Mr. Omollo Moses who have helped me with academic guidance in research till the end of the research.

ABBREVIATIONS AND ACRONYMS

Kg	Kilograms
ml	Milliliters
⁰ C	centigrade degrees
MPN	Most Probable Number
ISO	International Organization of Standardization
HACCP	Hazard Analysis and Critical Control Points
GPS	Global Positioning System.
FAO	Food and Agricultural organization.
WHO	World Health Organization.
E.C	Escherichia coli
T.C	Total Coliforms

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ABSTRACT

Nile tilapia (*Oreochromis niloticus*) contribution to the Gross Domestic Product lies in the range of 1.8% to 2.6% estimated to be between 750 billion to 1.08 trillion Ugandan Shillings. In this study, common fish handling practices by fishermen and vendors at Ggaba fish market were identified and these include icing, washing, smoking, salting and sun drying. This study reveals that over 90% of the fishermen and vendors do not receive training on better fish handling practices to reduce post-harvest losses and because of this income ranging from 15000 to 150000 Ugandan shillings is lost by individuals along the value chain per day. Additionally, 70% of the vendors and fishermen interviewed confirmed that they do not dispose of the spoilt and contaminated fish but rather sell it in prices ranging from 6500 to 12000 Ugandan shillings to people dealing in value addition.

The microbial load of indicator and pathogenic organisms was determined in Nile tilapia sold at Ggaba fish market on the shores of Lake Victoria, Uganda. A total of 15 fish samples and swabs were collected randomly along the value chain in the market. The total coliform counts, *Escherichia coli*, and *Staphylococcus aureus* were enumerated using standard microbiological methods. The findings showed that Nile tilapia was of low microbial quality for *Escherichia coli*, moderate for total coliforms, and high for *Staphylococcus aureus* counts with mean values of 10.95MPN/100ml, 42.39MPN/100ml, and MPN/100ml respectively. Contact surfaces like auction slab 1, fish stalls and equipment like pangas and gum boots had the highest *Escherichia coli* count whereas the fish trucks had the lowest counts for the parameters analyzed. For all the samples analyzed, no *Staphylococcus aureus* was detected. As total coliforms and staphylococci are often implicated in incidences of food poisoning whereas *Escherichia coli* indicating fecal contamination, this study suggests that consumption of Nile tilapia at Ggaba fish market, may pose a public health concern if the sanitation and hygiene practices are not revised.

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