

**Physio-Chemical Properties of Tap Water Supplied in Tororo Municipality and Nagongera
Town Council**

Amenu Rogers

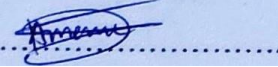
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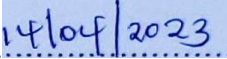
**A Research Report Submitted to the Department of Chemistry in Partial Fulfilment of the
Requirements for the Award of the Degree of Bachelor of Science Education of Busitema
University**

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Declaration

I, Amenu Rogers, declare that this research work is my original work otherwise cited, and where such has been the case reference has been stated and that the same work has not been submitted for any academic award in any other university or tertiary institute of higher education.

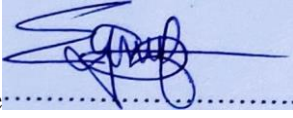
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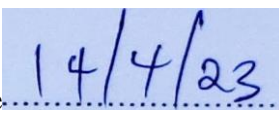
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Approval

This research work has been submitted for examination and has been approved by my supervisor.

Dr Egor Moses

Signature 

Date 

Dedication

I dedicate my research work to my parents Mr Oniaun James and Mrs Aliano Oniaun Victoria and Ms Aculet Sarah for their endless effort, spiritual and moral support towards my success in education.

Acknowledgement

I thank my supervisor Dr Egor Moses who always guided me and provided necessary support towards the successful completion of my research work. I appreciate the members of the Department of Chemistry in particular Dr Kamoga Omar, Dr Andima Moses, Dr Richard Oriko Owor, Dr Kigozi Moses and the laboratory technician Ms. Nakijoba Lydia, for the tireless commitment and time offered in support of the research work.

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List of Acronyms and Abbreviations

EDTA -	Ethylene diamine tetra acid
NTU -	Nepphelometric Turbidity units
NWSC-	National Water and Sewerage Corporation
RDA -	Recommended Dietary Allowances
SDG -	Sustainable Development Goal
TCU -	True Color Unit
WHO -	World Health Organization

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Abstract

In the recent years, there has been an increase in the consumption of the water supplied by the intermittent systems. This water is assumed to be safe for any domestic and other uses, however this research determined the different physio-chemical parameters of the water supplied by NWSC to Tororo Municipality and Nagongera Town Council. Different methods were used to examine the parameters including titration. Tororo Municipality water had all the parameters lower than those of Nagongera Town council due to different factors as discussed in the report.

CHAPTER 1: INTRODUCTION

1.1 Background

Water contains hydrogen and oxygen atoms combined in the chemical structure, linked by the hydrogen bonds undergoing topological reformation. The water quality depends on the place and time variation. Most of the earth's water is salty which cannot be used by human beings domestically. Few fresh water sources available are highly susceptible to the pollution from anthropogenic sources which degrades its quality. This renders it harmful for domestic and fish existence (Boyd, 2019). Water is the major constituent of earth's hydrosphere and fluid in the bodies of all living things. where it acts as a solvent therefore, life in all forms depends on water and the earth cannot continue in the absence of water (Haltiner, 1999).

The domestic water suppliers are of the fundamental requirements for human life. And without water life cannot be sustained beyond a few days. In addition, lack of access to adequate safe water suppliers, it can lead to the spread of diseases. Children bear the greatest health risk associated with poor water and sanitation for example diseases such as diarrhea. This is attributed to poor water supply, sanitation and hygiene. All these account for 1.73 million deaths each year and contribute over 54 million disability adjusted life years. A total equivalent to 3.7% of the global burden of diseases (Sobsey, 2002).

Intermittent water supply systems represent a range of water supply services that supply water to consumers for less than 24 hours per day or not at sufficiently high pressures (Charalambous & Liemberger, 2017). Such systems are typical in developing countries, with more than 1.3 billion people in at least 45 low- and middle-income countries reportedly receiving water through intermittent systems.

It is generally considered that intermittent water supply systems are not an ideal method of supply and do not constitute the best solution. Where such systems are poorly maintained and have leaky pipe infrastructure, contamination can intrude into the water distribution system when pipes are at low or zero pressure. This could be through infrastructure deficiencies for example holes, cracks in some pipes due to aging. Deterioration or break flows through cross connections and this could happen through events that are persistent or temporary.

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