

**ASCORBIC ACID CONCENTRATION IN SELECTED FRUITS SOLD IN LOCAL MARKETS
IN UGANDA (A REVIEW)**

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**RESEARCH REPORT SUBMITTED TO THE DEPARTMENT OF CHEMISTRY IN
PARTIAL FULFILMENT OF REQUIREMENTS FOR THE AWARD OF THE DEGREE
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DECLARATION

I, Kisisho Walter, declare that the work has been out of my own reading/research except the citations made from different references and has not been submitted before to any of the University.

Signature.....

date.../.../....

APPROVAL

This research report has been submitted for examination with approval by my supervisor.

Signature

Date

.....

.....

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DEDICATION

I dedicate this book to my beloved mum, Kanus Lucia, for the support and guidance she has shown to me throughout my time of studies.

TABLE OF CONTENTS

APPROVAL	ii
DEDICATION	iii
ACKNOWLEDGEMENT	vi
LISTS OF TABLES.....	vii
LIST OF FIGURES	viii
List of Acronyms	ix
Abstract.....	x
1.1 Background	1
1.2 Problem Statement	3
1.3 Objectives of Study	3
1.3.1 General Objective of Study	3
1.3.2 Specific Objectives.....	3
1.4 Justification of the Study	3
CHAPTER TWO: LITERATURE REVIEW	5
2.1 Sources of Vitamin C	5
2.4 Deficiency Symptoms of Vitamin C	8
2.5 Diseases Associated With Vitamin C	9
CHAPTER THREE: RESEARCH METHODOLOGY.....	12
3.1 A Comparison of Spectrophotometric and Titrimetric Methods for the Determination of Vitamin C Concentration	12
3.2 Sample Collection.....	12
3.3 General Sample preparation	12
3.4 Review of Ascorbic Acid (Vitamin C) in the Fruit Sample by Spectrophotometer	12
3.4.1 Apparatus	12
3.4.2 Materials	12
3.4.3 Reagents Preparations	13
3.4.4 Procedure	13
3.4.5 Reactions Taking Place	13
3.5 Determination of Ascorbic Acid in Fruit Samples by Titration Method.....	15
3.5.1 Apparatus	15
3.5.2 Reagents.....	15
3.5.3 Procedure for Determination of Ascorbic Acid by Titration Method	15

CHAPTER FOUR: ANALYSIS OF THE RESEARCH FINDINGS	18
4.1 Analysis of Results by Titrimetric Method	18
4.2 Analysis of Results from Spectrophotometric Method	19
CHAPTER FIVE: CONCLUSION.....	22
5.1 Challenges Faced in this Research	22
5.2 Recommendations	22
References	24

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LISTS OF TABLES

Table 1: Absorbance of Ascorbic Acid at Various Concentration (mg/L and g/L)..... 14

Table 2: Vitamin C Concentration (mL and mg) of Fruit Samples by Titration 16

LIST OF FIGURES

Figure 1: Structure of Ascorbic Acid	1
Figure 2: Fruits that provides With Vitamin C (atkins, 2017)	5
a)Figure 3: Stages of Mangoes During Ripening b) Figure 4: A Fully Ripe Mango	7
Figure 6: A comparison between spectrophotometric and titrimetric method.....	17
Figure 7: Oxidation of Ascorbic Acid to ketogulonic Acid	20

List of Acronyms

AA - Ascorbic acid

DHAA- Dehydroascorbic acid

MPA- Metaphosphoric acid

DNPH- Dinitrophenylhydrazine

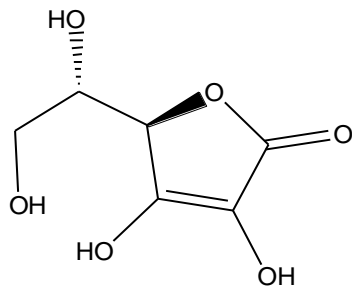
Abstract

The review deals with analysis of ascorbic acid (vitamin C) content of some fruits i.e. mangoes, oranges, lemons, apples and water melons sold in local markets in Uganda. Vitamin C content is analyzed from various research works and compared. The methods for comparison were spectrophotometric and titrimetric methods, the absorbance was measured spectrophotometrically at 521 nm. The titrimetric method is carried out by an iodometric back titration. The results from this study showed that there is no much difference between the two methods but spectrophotometric method is more preferred to determine the amount of vitamin C than titrimetric method because it is easier to use and fast to produce results. Vitamin C concentrations should be established such that people are informed about the type of fruit with less health effects.

CHAPTER ONE: INTRODUCTION

1.1 Background

Ascorbic acid is the most abundant vitamin in fruits and vegetables. Vitamin C is the most important vitamin for human nutrition that is supplied by fruits and vegetables. It is a valuable food component because of its antioxidant and therapeutic properties (Dhuique-Mayer, 2007).



ascorbic acid

(Kumar, 2013).

Figure 1: Structure of Ascorbic Acid

Vitamin C or ascorbic acid is a water-soluble vitamin, well recognized as an anti-scorbutic food factor. Chemically, it is a six-carbon sugar, with a diol group at carbons 2 and 3 which is readily oxidized to a diketone group to form dehydroascorbic acid (DHAA) (Bender, 1982).

Vitamin C is readily oxidized to dehydroascorbic acid DHAA and is the most prominent chemical property of the vitamin. The two biologically active forms of vitamin C present naturally in foods are L-ascorbic acid and L-dehydroascorbic acid (DHAA). The form most often encountered is L-ascorbic acid, but small amounts of its primary oxidation product, DHAA, may also be present (Hernandez, 2005).

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