
COMPARISON OF THE VITAMIN C CONTENT OF LOCAL ORANGES AND THE
GRAFTED ORANGES IN BUNGOKHO SUBCOUNTY MBALE DISTRICT.

By

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DECLARATION

I WANGISI SAMUEL solemnly declare that the project work entitled "COMPARISON OF THE VITAMIN C CONTENT OF LOCAL ORANGES AND THE GRAFTED ORANGES IN BUNGOKHO SUBCOUNTY MBALE DISTRICT." submitted to the Department of Biology, Busitema University, in partial fulfillment of the requirements for the award of the degree of Bachelor of Science and Education, is a record of an original work done by me under the supervision of Dr. Hokello Joseph. The results in this report have not been submitted before for any other degree, part of degree or examination at this or any other university.

Signature.....

WANGISI SAMUEL

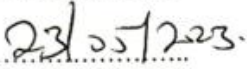
Date.. 23/05/2023

APPROVAL

This research report has been submitted for examination with my approval as the candidate's supervisor.

Signature.....

Dr. HOKELLO JOSEPH

Date.....





DEDICATION

I dedicate this piece of work to my FAMILY MEMBERS, MY COLLEAGUES AT CAMPUS, AND ALL MY LECTURERS for their generosity and endless support towards me attaining this level of education. I love you all.

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I bless the Almighty God for the gift of life he has given to me up to date. He has been my helper, comforter, refuge, hope, provider and protector, for he has made me whom I am today.

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ABSTRACT

Vitamin C is an organic compound that is made up of carbon, hydrogen, and oxygen. Vitamin C is also called ascorbic acids, but it includes all compounds showing biological activity, such as oxidized ester, and synthetic forms. Vitamin C can be obtained from the following sources; oranges, tomatoes, strawberries, and sweet peppers etc. The fruits are thus of medical importance and their acidity can be employed in several activities.(Ojukwu,2017). Vitamin C is important in the cellular break down of food for the maintenance of oxidation-reduction balance. Vitamin C is an essential nutrient that must be obtained through the diet in adequate amounts to prevent hypovitaminosis C, i.e. deficiency of vitamin C in the body which leads to a potentially fatal deficiency disease scurvy. Deficiency of ascorbic acid in the body, causes a number of deficiencies in the body such as scurvy, vision loss, weak immunity, being tired and cranky, dry and wrinkled skin, weight gain, bleeding gums, nose bleed, bruises, and slow wound healing and so on. Due to the fact that the citrus content of grafted oranges and local oranges are different. The study there for helped us to determine and compare the vitamin C content of grafted oranges and local oranges in Bungokho sub county mbale district. The study was found out to be of importance to researchers in the future who will study grafting and its effects on fruit quality and citrus content, which will give farmers an insight to make good choice of oranges. The method of the study was majorly experimentation. About 20 oranges were collected from different trees of local oranges, and grafted oranges. Each group of oranges was used to provide the juice for titration with iodine solution. The ascorbic acid content of local oranges and grafted oranges was determined by iodine titration, and the kind of orange fruits with more ascorbic acid was determined. Data presentation was in form of tables, pie charts and graphs while data analysis was by independent samples t test.

CHAPTER ONE

1.0 INTRODUCTION

1.1. Background;

Vitamin C is a water-soluble vitamin found in citrus and other fruits and vegetables, and also sold as a dietary supplement (Jacob *etal*,2002). It is an organic compound that is made up of carbon, hydrogen, and oxygen. Vitamin C is found in ascorbic acids, but it includes all compounds showing biological activity, such as oxidized, Ester, and synthetic forms. We shall there for center our study majorly on the oranges considering the grafted and local oranges. Grafting is a technique in horticulture whereby tissues of plants are joined so as to continue their growth together. The upper part of the combined plant is called the scion while the lower part is called the rootstock (Mudge *etal*,2009). Grafting has been proven to increase the fruit quality and yield in oranges and therefore we need to find out what happens to the citrus content of the oranges as a result of grafting.

Vitamin C is one of the most important essential nutrients needed by the body it is important in forming collagen, a protein that gives structure to bones, cartilages, muscles, and blood vessels. (Ojukwu.,2017). Vitamin C also aids in the absorption of iron, and helps maintain capillaries, bones, and teeth. It is the most common electro active biological compound and one of the most ubiquitous vitamins ever discovered (Pisosichi *etal*, 2011).

. The main natural form of vitamin C is L-ascorbic acid, and it can reversibly change to an oxidized form called dehydroascorbic acid. Dietary sources of vitamin C include citrus fruits, tomatoes, potatoes, broccoli, strawberries, and sweet peppers. Vitamin C is essential in cellular metabolism for the maintenance of oxidation-reduction balance. (Ojukwu.,2017). Vitamin C is an essential nutrient that must be obtained through the diet in adequate amounts to prevent hypovitaminosis C, deficiency, as it would lead to disease scurvy. (Reactions, 2019). This potentially fatal disease can be prevented with as little as

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