BUSITEMA UNIVERSITY
Pursuing Excellence

FACULTY OF ENGINEERING

DEPARTMENT OF AGRICULTURAL MECHANIZATION AND IRRIGATION ENGINEERING

FINAL YEAR PROJECT REPORT

INVESTIGATING THE EFFECT OF INTERGRATED ORGANIC FERTILIZER (BOKASHI) ON KALE (SUKUMA WIKI) PRODUCTION CASE STUDY: BUSITEMA UNIVERSITY EASTERN UGANDA

BY

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ABSTRACT.

Crop production in agricultural dry land areas of Africa is limited by low soil fertility. Bokashi amendment to this soil is considered to be the key solution to overcome the problem for continuing sustainable crop productions. A number of research results in Indonesia have been shown to have beneficial effects in using Bokashi. It is believed that Bokashi is a technology which could change agricultural management to more natural farming system than chemical based practices. Accordingly, it may improve the soil fertility and plant production. Moreover, adopting the Bokashi amendments in this area is regarded to be more adaptable to farmers and abundance locally raw material resources.

Keywords: Soil fertility, Crop production, Effective microorganisms, Bokashi, Organic fertilizer

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Above all Almighty God, you are the master of everything, may you continue blessing us in all our efforts.

DEDICATION

I dedicate this report to all my family members for the love and efforts they render to me more so to my father MR. ONEN KASIMIRO BYERUHANGA, my beloved mother Mrs. JOICE ONEN and my dear husband Mr. WAFULA ROBERT. May the almighty God bless and reward them abundantly.

DECLARATION

I **ANYANGO BEATRICE**, declare to the best of my knowledge that this report project is as a result of my research and efforts.

Student's signature: .....

Date: .....

APPROVAL.

This project has been submitted to the department of Agricultural mechanization and irrigation Engineering of Busitema University with approval of the following University Supervisors.

Mr. EBIC ANDREW

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Mr. BWIRE DENIS

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Date.....

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1.0 CHAPTER ONE. INTRODUCTION

This chapter briefly discusses the introduction, background and level of agriculture in Uganda, justification, and purpose of the research, objectives and scope of the study and finally the significant of the study.

1.1 Introduction

A major constraint to crop production in dry land of agricultural areas in Africa is due to the low of soil fertility. Utilization of Bokashi as an organic fertilizer has been promoted to overcome this problem. Practical advantages of the use organic fertilizers may include quick preparation, low cost, locally available materials, and adaptable to farmers. Bokashi is a technology which converting the use of chemical-based farming systems to a more sustainable agriculture by which improving and maintaining the fertility of soil. The aim of this paper is to short review the use of Bokashi in improving soil fertility and crop production (Sabas et al., 2010).

1.2 Background:

Recent agricultural trends indicate that yield for many crops are not rising as quickly as they did because of declining soil fertility and mismanagement of plant nutrients. So the challenge for agriculture for the future generations will be to meet the world's increasing demand for food while, maintaining and improving soil and environmental quality in a sustainable way ((Wang & Xing, 2017)). According to Balesh (2006), Soil fertility degradation is described as the most important constraint to food security in Africa in general and Uganda in particular. Nutrient status is widely constrained by the imbalances caused due to nutrient input and outputs, resulting to negative nutrient balances. The problem with nutrient imbalance is attributed to insufficient use of mineral and organic nutrient sources as inputs relative to nutrient loss as exports (Allen et al., 1998).

Similarly, soil fertility status of Uganda is not much different from the situation of other parts of the world, except higher rates of nutrient depletion and land degradation than most of the African countries, due to lack of adequate mineral fertilizer input, limited return of organic residues and manure, high biomass removal, erosion, leaching, poor management or irrigation water and its dominant high land topography. So, there is an urgent need to improve nutrient management.

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