



FACULTY OF ENGINEERING

DEPARTMENT OF AGRICULTURAL MECHANIZATION AND
IRRIGATION ENGINEERING

**DESIGN AND FABRICATION OF MOTORIZED MAIZE PEELING MACHINE
FOR SMALL SCALE FARMERS.**

FINAL YEAR PROJECT REPORT PREPARED

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The final year project report submitted to the department of Agricultural mechanization and Irrigation Engineering in partial fulfillment of the requirement for the award of the Bachelor's Degree in Agricultural Mechanization and Irrigation Engineering at Busitema University.

December 2022

DECLARATION

I firmly declare that the content in the in my final year project report is my work archived after serious research Therefore, it has never been submitted by anyone for any award.it is truly the work of my hand.

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APPROVAL

This is to confirm that the final year project report of DESIGN AND FABRICATION OF MAIZE PEELING MACHINE FOR SMALL SCALE FARMERS is submitted to the department of Agricultural Mechanization and Irrigation Engineering was done under my supervision.

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Signature: 

Date: 20/4/2023

DEDICATION

I whole-heartedly dedicate this final year project report to my parents MR KUMAKECH ALBERT & MRS NGAMITA MARY, my sisters, my brothers, and all other relatives and friends for the continuous support and services they have rendered to me both spiritually, physically and financially throughout my whole academic life, May the almighty God reward them abundantly.

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ABSTRACT

Maize, originally a new crop was introduced in Uganda in 1996. Maize is the only food crop which is being consumed in the whole world. Maize crop best in deep, well-drained soil fertile where the seasonal rainfall exceeds 500mm. It is tolerant to soil acidity and it is susceptible to both drought and logging. In Uganda maize is grown on large scale in western Uganda. Other regions such as Eastern, Northern and central.

Maize is the very nutritious crops that is why it is consumed all over the world. It contains following food values (70% -87%) is carbohydrate, (6%-13%) protein, 4% is protein, 2-6% is oil and (1%-3%) sugar.

Maize peeling is one of the post-harvest operations of maize. It can be done either from the garden or at home after harvesting. Traditionally maize peeling was done using manual method which is time consuming, tedious and it is still continuing because of low income of the maize growers in Uganda. Another method of peeling maize is by the use of combine harvester of maize. This mechanical method is faster, has high efficiency and leads to increase in the production of maize and the maize loss is also reduced. The problem with this method of peeling is that it is very expensive and few or no farmer in Uganda can afford. To overcome this problem, there is a need to design a simple machine that performs the same purpose but cheaper than the combine harvester. The motorized maize peeling machine will be designed to solve the problem being faced by the small-scale farmers. Generators can as well as be used but are expensive compared to motor.

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CHAPTER ONE

1.0 BACK GROUND

Agriculture has become a major economic activity in many countries and is said to be the wealth of the country. In many developed countries they have improved agriculture by developing machines for deseeding, shelling and peeling. However, these machines are highly sophisticated and hardly affordable which leads to farmers turning to manual farming methods and thus increase labourers and wages. From rural background, dry maize leaves causes skin irritation and again using bare hands to peel maize will make them swollen so farmers tend to wear protective clothing which cover their legs and hands when they harvest even if it is very hot and this will eventually make the body weak. ('S2351978920307034', no date)



Figure 1 showing protective attire for harvesting.

The second sustainable goal aims at ending hunger and all form of malnutrition. The proposed designed machine will lead to ending hunger in Uganda this is because there will be no delay in the production and processing of maize into useful consumable form for example posho.

Maize (*Zea mays* L.) is a member of the grass family. Maize is the most important cereal in the world after wheat and rice with regard to cultivation areas and total production (OLADEJO, J.A. AND ADETUNJI, M.O,2012)

Maize is the most important cereal crop in Uganda providing over 40% of the calories consumed in both rural and urban areas. The crop has increasingly become a staple food in many parts of the country. Small scale farmers who constitute the bulk (80%) of the rural poor also account for the largest share of maize production. It is grown in every part of the country and a direct source of livelihood to over 2 million households, over 1,000 traders/merchants

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