BUSITEMA UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF AGRICULTURAL MECHANIZATION AND IRRIGATION ENGINEERING

DESIGN AND CONSTRUCTION OF A CENTRIFUGAL GRAIN GRINDER FOR A RURAL COMMUNITY

BY

NDIBWAMI BLYDENS

BU/UG/2008/17

Bblydens@yahoo.com

+256700656575/+256777233388

SUPERVISORS:

Madam KABASA MARY SALLY

MR.AYELLA PAUL

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PREFACE

The design and construction of a centrifugal grain grinder, for my final year project, was undertaken to promote the grinding of various food grains for human nutrition, improve on the livelihood and increase grain production since the grinder can also be used for processing of other farmers' food grain at a fee hence enhancing food security

The grinder design was based on the various solutions I came up with to help overcome the various problems faced by small scale community farmers to improve the nutritional status of the population and enhance food security hence the design and construction of a cheap, efficient and readily available centrifugal grain grinder.

DEDICATION

I dedicate this work my family; my parents; Mr. Bakiirah Herbert and Mrs. Komukama Dinah, sister and brothers who have always shown concern for my endeavors and for their guidance and assistance throughout the course of my studies. May the good lord reward the work of their hands.

ACKNOWLEDGEMENT

I would like to acknowledge the following people for the wonderful guidance and support they have given me in ways;

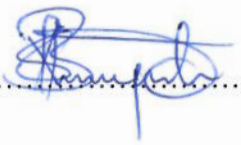
My supervisors, Madam Kabasa Mary Sally and Mr. Ayella Paul for their wonderful advice and guidance throughout the course of the study. Their vast experience really gave me a lot of motivation to continue with my endeavors. Thank you so much.

The Technicians of Busitema University workshop. Thank you so much for your technical advice in your respective fields of specialization. Your efforts were greatly appreciated.

My former classmates (Wodeya David and Lubega Lawrence) who have always believed in me. But nonetheless thank you so much everyone for your wonderful support.

DECLARATION

I NDIBWAMI BLYDENS declare that this work is original and has not been submitted for any academic award in any higher institution of learning.

Signature:  .....

Name: NDIBWAMI BLYDENS

Registration Number: BU/UG/2008/17

Date: 18th July 2013.....

APPROVAL

The following project by Ndibwami Blydens under the topic "Design and Construction of a Centrifugal Grain Grinder" has been under our supervision.

Main Supervisor

Signature:.....

Name: Madam Kabasa Mary Sally

Date:.....24 July, 2013.....

Co - Supervisor

Signature .....

Name: Mr. Ayella Paul

Date .....

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Uganda is a land locked country on the equator in East Africa and is situated in mid-eastern Africa with a total area of 241,040 km^2 (FAO 2006). Grain production in Uganda is characterized by small scale subsistence farmers who account for 95% of the production while the other 5% is by commercial production which is limited to maize, sorghum, and rice.

At the processing level, grain milling is the most widespread power-driven small-scale industry in Uganda, in both urban and rural areas. Maize mills account for more than 70% of all grain milling activity. However, contribution to the gross value of industrial output is quite small, compared with their relative numbers within the industrial sector. According to one survey (conducted by UBOS in 2001), grain mills accounted for only 6% of the value of industrial output but for 15% of the total number of establishments in the industry. The gross value added in the milling industry is also low.

The processing of food grain plays an economically important role in developing countries such as Uganda since processed grain is one of the most important elements in the diet of low-income groups, especially in urban areas where these groups are not equipped to carry out the basic processing of agricultural and animal products.

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