DESIGN AND DEVELOPMENT OF AN AUTOMATED NUT PROCESSOR

Design Project

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July 2017

DESIGN AND DEVELOPMENT OF AN AUTOMATED NUT PROCESSOR

Undergraduate Design Project
Submitted to the Faculty of the
College of Engineering and Information Technology
Cavite State University
Indang, Cavite

In partial fulfillment
of the requirements for the degree,
Bachelor of Science in Computer Engineering

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July 2017

ABSTRACT

ALANO, CELINE FLOREIN Q. and AUSTRIA, AIZLE O., Design and Development of an Automated Nut Processor. Undergraduate Thesis. Bachelor of Science in Computer Engineering. Cavite State University, Indang, Cavite. May, 2017. Adviser: Prof. Marivic G. Dizon.

A study was conducted to design and develop an automated nut processor. It aimed to help the entrepreneurs to automate the processing of nut with the help of the machine developed. The general objective of the study was to design and develop an automated nut processor. The study specifically aimed to: design and fabricate an automated nut processor; construct a microcontroller circuit; develop a program for the system; test and evaluate the device's performance according to: amount of the nuts dispensed by the hopper, amount of sugar dispensed by the hopper, amount of oil dispensed by the dosing pump; conduct a cost consumption of the system. The automated nut processor was designed and developed to roast and flavoring the nuts.

The materials that were used in the study were: microcontroller unit, induction cooker, Geared motors, relays, load cell controller, dosing pump and photo-interrupter sensors. The machine used Arduino AT Mega as microcontroller which executes the program to control the relays, motors, and sensor at the same time.

Result of the evaluation showed, based from the evaluated efficiency, the automated nut processor was considered desirable and effective to business firms and entrepreneur companies.

The study was proven effective on its capability to meet its objectives. The automated nut processor had a total cost of P 44, 500.00.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDIX TABLES

LIST OF APPENDIX FIGURES

LIST OF APPENDICES

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDIX TABLES

LIST OF APPENDIX FIGURES

LIST OF APPENDICES

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An undergraduate design project submitted to the faculty of Department of Computer and Electronics Engineering, College of Engineering and Information Technology, Cavite State University, Indang, Cavite in partial fulfillment of the requirements for graduation with the degree of Bachelor of Science in Computer Engineering (BSCoE). No.CEIT-2016-17-SUM-006. Prepared under the supervision of Prof. Marivic G. Dizon

INTRODUCTION

Nut has been a popular crop in the Philippines. It is also one of the major field legumes grown by farmers but its production has been low and erratic. In the Philippines, nuts can be grown throughout the year provided production inputs, especially the water requirement, are adequately available (PCARR, 1978).

In general, Nut processors indicated that the lack of good quality nuts in adequate volume was a major constraint in the expansion of markets for nut products. It was indicated by other sectors that farmers were discouraged from planting nuts due to lack of profitable markets. An evaluation of the post-harvest handling practices for nuts indicated that there was inadequate capability among producers of nuts to convert newly harvested produce into clean, dry, sorted, and graded nuts, or into the form required by processors. Nuts produced deteriorated in quality, lost profitable markets, and could not compete with imports.