DEVELOPMENT AND PERFORMANCE EVALUATION OF COCONUT FIBER POT MAKING MACHINE

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(AB Machinery and Power Engineering)

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ACCEPTANCE SHEET

This undergraduate thesis entitled **"DEVELOPMENT AND PERFORMANCE EVALUATION OF COCONUT FIBER POT MAKING MACHINE"** prepared and submitted by **ALLYSSA MARI B. CARREON** and **DANIELA G. MAGBITANG**, in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN AGRICULTURAL AND BIOSYSTEMS (AB MACHINERY AND POWER ENGINEERING)**, is hereby accepted:

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BIOGRAPHICAL SKETCH

Allyssa Mari Bernal Carreon was born on February 12, 2001, in Guimba, Nueva Ecija. She is the second oldest daughter of Mr. Edwin Carreon and Mrs. Marilou Carreon. She finished her elementary education at Guimba East Central School. She attended Bartolome Sangalang High Scool from 2013 to 2017 and went on to complete her Senior High School Education (2017-2019) at Our Lady of the Sacred Heart College of Guimba, Inc., taking up the General Academic Strand (GAS).

Daniela Grospe Magbitang was born on October 26, 2000, in San Jose City, Nueva Ecija. She is the youngest of Daniel Ratcho Magbitang's five children with Gina Grospe Magbitang. She finished her elementary education at Bagong Sikat Elementary School in 2013. Daniela attended Constancio Padilla National High School from 2013 to 2017, where she continued her academic success. She then went on to complete her Senior High School education (2017-2019) at San Jose City National High School in San Jose City, focusing on Accountancy and Business Management (ABM).

They are both currently pursuing their bachelor's degree in Agricultural and Biosystems Engineering at Central Luzon State University (CLSU). Their undergraduate thesis, "Development and Performance Evaluation of Coconut Fiber Pot Making Machine," was inspired by their desire to go further into their field of study, demonstrating their commitment to comprehensive research along with knowledge development. As important contributors, their combined efforts represent a significant step toward a more effective future.

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ALLYSSA MARI B. CARREON
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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDIX TABLES

LIST OF APPENDIX FIGURES

ABSTRACT

CARREON, ALLYSSA MARI B. & MAGBITANG, DANIELA G., Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **July 2024, DEVELOPMENT AND PERFORMANCE EVALUATION OF COCONUT FIBER POT MAKING MACHINE**

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In response to the escalating environmental concerns surrounding the waste of coconut fiber or husk, the study introduces a pioneering solution by producing a commercial product from the said waste. This paved way to the development of a coconut fiber pot making machine. The machine incorporates the environmental sustainability of the production process of biodegradable pots using coconut fiber as the primary raw material. Transforming agricultural by-products into value-added materials. The coconut fiber pot making machine was designed to produce 4 pots per molding that can produced 88 pots per day and can be used for ornamental purposes.

The researchers produced coconut fiber mats using three different ratios of binder and water: 1:1, 1:2 and 2:1, to effectively establish the best ratio for the pot making. The study reveals that the 1:2 and 2:1 ratios are the best for molding pots, with no significant differences in durability. The 1:2 ratio, with 30 g of glue, 72 g of water, and 58 g of fiber, provides high durability and consumes less raw material, making it cost-effective and resource-efficient. This ratio is recommended for large-scale production and sustainability.

Keywords: coconut fiber; ratio; durability

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