UNIVERSITI TEKNOLOGI MARA

PINEAPPLE TART MOULD MACHINE

AINI SHAYLINEKA BINTI AB RAZAK

Diploma (Mechanical Engineering)

College of Engineering

Feb 2023

ABSTRACT

Pineapple tart biscuits are one of the most popular dishes in Malaysia, as we know. The taste was so delicious since it was a traditional biscuit. Some modifications will be implemented in this product since before this we used manpower. To make it easy, this product will help a lot of people, especially those in the IKS (Industri Kecil & Sederhana). In this design, the features can enhance the production at their own speed based on the machine set up. For example, we just put the dough and the jam before the machine operates automatically from the start until the end, which will be the result and it will get into the oven. A little bit of the overview for the operation later on this product can reduce the amount of energy needed to make pineapple tart biscuits, and it will be a quick process than before.

ACKNOWLEDGEMENT

Firstly, I wish to thank God for giving me the opportunity to embark on my diploma and for completing this long and challenging journey successfully. My gratitude and thanks go to my supervisor, Mr. Ahmad Najmie bin Rusli for his time and efforts he provided throughout the year. Useful advice and suggestions were really helpful to me during the Final Year Project. In this aspect, I am eternally grateful to you.

Much thanks and appreciation to my parents, family and friends for their cooperation, encouragement and full of support from the beginning till the end. Also thanks to my friends and my housemate, that have been contributed by supporting my work and help myself during Final Year Project.

Finally, this dissertation is dedicated to my father and mother for the vision and determination to educate me. This piece of victory is dedicated to both of you. Alhamdulilah.

TABLE OF CONTENTS

CONFIRMATION BY SUPERVISOR	ii
AUTHOR'S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	XX
LIST OF FIGURES	XX
LIST OF ABBREVIATIONS	XX

CHAPTER ONE : INTRODUCTION

1.1	Background of Study	1
1.2	Problem Statement	1
1.3	Objectives	2
1.4	Scope of Study	2
1.5	Significance of Study	2

CHAPTER TWO : LITERATURE REVIEW42.1Benchmarking/Comparison with Available Products4

2.1	Benchmarking/Comparison with Available Products	4
2.2	Related Manufacturing Process	7
2.3	Sustainability/Ergonomic Related Items	7
2.4	Patent and Intellectual Properties	8
2.5	Summary of Literature	9

CHAPTER THREE : METHODOLOGY

		10

3.1	Overall Process Flow	10
3.2	Detail Drawing	13
3.3	Engineering Calculation and Analysis	25
3.4	Bill of Materials	28

CHAPTER ONE INTRODUCTION

1.1 Background of Study

Along time ago, our society was introduced a basic mould to make tradisional biscuit such as pineapple tart, semperit, dahlia, and others. At that time, any machine to produce the biscuits was unavailable on the market since there was no innovation from each of the engineers. The traditional process might take a long time because of the step-by-step too complicated. This can be seen when the bakers just have the one and only mould to make the biscuit. But, they need to produce a lot of it depending on the jar's size. For the small size, just fit into 30 pieces of biscuit,but for the big size, 50 pieces only in terms of plus or minus. As a normal baker, they must have their own limit to fulfil the customer's order due to several factors, in particular a lack of manpower or the equipment not being able to accommodate the total of the biscuits. We know that manual and automatic processes totally different. Therefore, this research will lead to the innovation of pineapple tart biscuit mould machine.

1.2 Problem Statement

These problem statements are based on the surveys that I have questioned some of the bakers to get their opinions about the difficulty of making a pineapple tart biscuit manually. Most of the respondents said they had problems producing the biscuits in a large amounts. This proves that a solution is needed to ease their issues.

Based on the result, we can say that it takes too much time to produce this biscuit during the process. Start by from making a dough, pinching it out of the mould and rolling the dough with the pineapple jam. Those activities require a worker, but through innovation, we decided to build the machine to help all of them.