

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT OF A PROTOTYPE
DUAL PURPOSE PALM
HARVESTER**

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ABSTRACT

This proposal outlines a research project aimed at developing cheap and reliable farming equipment for farming communities. The increasing number of abandoned palm farms has led to a significant low in palm fruit production, posing poverty and recovery challenges. The currently motorized palm fruit cart is very high maintenance, very slow, and loud. A lot of workers will have back problems when it comes to operating the mist sprayer. It requires about 2 to 3 days to finish all the work on the farm whether its weed spraying or fruit collecting. This project seeks to address these issues by implementing harvesting equipment that includes mobility, heavy duty, and a way to take care of the farm without taking a toll on human health. Through interdisciplinary approaches, the project aims to create harvesting equipment for sustainable farming that can be used by other farmers, for a cheap and yet useful

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TABLE OF CONTENTS

	Page
CONFIRMATION BY SUPERVISOR	ii
AUTHOR'S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS	x
CHAPTER ONE : INTRODUCTION	1
1.1 Background of Study	1
1.2 Problem Statement	2
1.3 Objectives	2
1.4 Scope of Study	3
1.5 Significance of Study	3
CHAPTER TWO : LITERATURE REVIEW	4
2.1 Palm Fruit Harvesting Technologies	4
2.2 Oil Palm Harvesting Equipment	4
2.3 Design Considerations	6
2.4 Benchmarking/Comparison with Available Product	8
2.5 Review of Related Manufacturing Process	10
2.6 Patent and Intellectual Properties	15
2.7 Summary of Literature	22

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

In the palm oil industry, Malaysia is the second largest producer of palm oil worldwide providing a third of the world's palm oil. By contributing 2.4 percent to its overall gross domestic product (GDP), palm oil is one of Malaysia's primary industries. Palm oil trees were introduced to British Malaya by the British government in the early 1870s. The first commercial palm oil cultivation was done in Selangor in 1917 at Tennamaran Estate. Since then, a lot of big companies have taken part in this industry like Sime Darby and Guthrie. Then, when the FELDA land settlement scheme was introduced, a lot of local people started joining the industry due to its demand and profit. By 2012, Malaysia has 5.1 million hectares of palm oil plantation which is 15.4% of the total land area in Malaysia.

Before the pandemic, a lot of local farmers relied on foreign labor because you need to be in great shape and have high stamina to do the work a lot of local farmers own minimally 10 acres of palm trees and the generation below the farmers mostly don't want to do all that hard labor. During and after the pandemic, a lot of the farms were poorly maintained because most of it was done by one worker, and some of the farms were abandoned. Other than that, most of the heavy machinery used by the big companies is too expensive to get and always needs more than one operator to work.

Nowadays, many farmers still rely on labor, but they also start investing in farm equipment. Most farmers use a motorized palm fruit cart that requires high maintenance and is very slow and loud to transport the palm on the move around the farm. For the weed and wild grass, farmers will use a mist sprayer filled with weed poison that you wear like a backpack that weighs around 25 kg and walk the whole farm. Due to the habits of the locals to always modify their motorcycle, some of the old motorcycles can easily be turn to become a dirt bike and a lot more.