UNIVERSITI TEKNOLOGI MARA

DESIGN AND FABRICATION OF MULTIPURPOSE AGRICULTURE MACHINE

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ABSTRACT

Cultivation of a crop involves various steps like ploughing, sowing seeds and sprinkling water. Farmers must use various agricultural equipment and labors to carry out these steps. The purpose of this project is to combine all the individual tools into one machine to provide farmers with multipurpose equipment which implements all the scientific farming techniques, suitable for all type of seed-to-seed cultivation with minimum cost as possible. Infront of the machine, there is a plough tool that can do the ploughing process. Next, there is a cylinder container that contains seeds that connects the front wheel with sprockets and chain. Thus, the sowing seeds process will occur when the machine is moving. Furthermore, this machine use water pump to sprinkle water. At the back of the machine, there is a covering tool that functions to level the soil. The advantages of this machine are easy to clean and maintain, more economical and not difficult to operate.

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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		**xx**
LIST OF FIGURES		**xx**
LIST OF ABBREVIATIONS		**xx**
CHAPTER ONE : INTRODUCTION		**1**
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 REVIEW		**4**
2.1	Benchmarking/Comparison with Available Products	4
2.2	Related Manufacturing Process	5
2.3	Sustainability/Ergonomic Related Items	6
2.4	Patent and Intellectual Properties	6
2.5	Summary of Literature	8
CHAPTER THREE : METHODOLOGY		**9**
3.1	Overall Process Flow	9
3.2	Detail Drawing	12
3.3	Engineering Calculation and Analysis	22
3.4	Bill of Materials	27

CHAPTER ONE
INTRODUCTION

1.1 Background of Study

Farming is the backbone of economy [1]. In agriculture sector, there is a lot of fieldwork, such as ploughing, sowing seeds and sprinkling water. These operations previously were done by traditional equipment. This field faces some problems such as how to minimize the losses, how to increase productivity and how to minimize cost [2]. There are two types of agricultural methods, conventional method and mechanize type method. In conventional method, they are working with equipment that was tedious and laborious. Moreover, conventional ways are time consuming. Mechanization method involves the use of a hybrid device between the power source and the work. This hybrid device usually transfers motion, such as rotary to linear, or provides sample of mechanical advantages. Mechanization in agriculture made farming easier and quick [3]. There are variety of machines available for almost every task in agriculture. From preparing land to harvesting crop and further process can be done by machines. Machines not only make these tasks easier but also very efficient [4]. The agriculture machines that are used nowadays are expensive. Most of the farmers own very small pieces of land and owning these costlier machines may not be feasible for them. Most farmers are still stick to conventional ways. The fact that most farmers are low level income earners, they cannot invest on the purchase of large machine. Considering above mentioned factors, the machine that need to be designed and fabricated must be multipurpose and low cost.

1.2 Problem Statement

Agriculture is the largest source of incomes [5]. Most farmers still depend primarily on agriculture for their livelihood and these farmers are lacks financially [6]. So, they can't afford costly equipment and machines. Thus, excess efforts are required for different process. Farmers will need to perform each cultivation process individually. Furthermore, lack of mechanization in farming. Some farmers are still