



UNIVERSITI TEKNOLOGI MARA
CAWANGAN TERENGGANU
KAMPUS BUKIT BESI

MEC299

**DESIGN AND FABRICATION OF AGRO
WHEEL**

MUHAMMAD AMEIN KHALIELEE BIN MOHD AZMI
2020881904

SUPERVISOR:

TS. DR. SHAHRUL HISYAM MARWAN
SEM MARCH AUGUST 2022

ABSTRACT

Pesticide sprayers are one of the most important tools in gardening. This tool helps gardeners to repel pests from damaging the crops they have planted. Nowadays there are many types and forms of pesticide sprayers, which are even more sophisticated from year to year. But there are many problems with poison sprayers, which are poison sprayers that are heavy and difficult for gardeners to carry. In addition, poison sprayers that have one spray nozzle can also cause trouble for gardeners because it takes a lot of time to poison pests. Therefore, the objective is to create a a product that can overcome all these problems and can save farmers in doing the product. In addition, the process of making this product by joining or welding. In addition, the materials used are old tires, gears, chains. Hollow iron and more. The next expected result from this project is to help gardeners to repel pests and the spraying process is going well.in conclusion, this project can help gardeners in gardening financially and save time.

TABLE OF CONTENTS

| | | |
|------------|---|-----------|
| 1.0 | Introduction | 6 |
| 1.1 | Background of Study | |
| 1.2 | Problem Statement | |
| 1.3 | Objectives | |
| 1.4 | Scope of Work | |
| 1.5 | Expected Results | |
| 2.0 | Literature Review | 9 |
| 2.1 | Agriculture Sprayer | |
| 2.1.1 | Backpack (Knapsack) Sprayer | |
| 2.1.2 | Lite-Trac | |
| 2.1.3 | Motorcycle Driven Multi-Purpose Farming Device (BulletSanti) | |
| 2.1.4 | Aerial Sprayer | |
| 2.1.5 | Automatic Pesticide Sprayer | |
| 2.1.6 | Solar Operated Pesticide prayer | |
| 2.1.7 | Cam Operated Agrochemical Pesticide Sprayer | |
| 2.1.8 | Agro Wheel | |
| 3.0 | Methodology | 27 |
| 3.1 | Flowchart | |
| 3.2 | Preliminary Results | |
| 3.3 | Gantt Chart | |
| 4.0 | References | 45 |

CHAPTER 1

INTRODUCTION

1.0 Introduction

1.1 Background of Study

Nowadays, agriculture is very important in our country, Malaysia. Agriculture is the main source for smallholders in rural areas. In addition, their agricultural products are also one of the sources of food for all Malaysians. In addition, the climate in Malaysia has a uniform temperature, high humidity, and abundant rainfall. Therefore, the land in Malaysia is very suitable for farming. However, agricultural resources in our country are declining. Among the factors are lack of manpower and cost. the production of which is so expensive. Therefore, this machine was created to help small farmers to garden without using a lot of energy and high cost.

Usually, everyone is familiar with the term "sprayer." Sprayers of many types have been invented up to the year 2019, including the Plastic Knapsack Sprayer, Pressure Water Sprayer, Ogawa Sprayer, Shizuka Sprayer, 2L Pressure Sprayer, and Typical Garden Sprayer. Gardeners and farming sectors typically utilize these sprayers to spray pesticides, herbicides, or water their plants in farms and gardens.

AGRO WHEEL is primarily intended for spraying pesticides, herbicides, and water in vegetable gardens. Gardeners will usually spray water daily, while pesticides and herbicides will be sprayed at least once a week. Gardeners must spray their gardens with pesticides and herbicides to ensure no shrubs grow and prevent bugs, caterpillars, and other pests. Gardeners often spray their gardens using a 16 -liter manual Knapsack sprayer, which may take a long time to complete. Furthermore, this manual Knapsack sprayer only comes with one nozzle.

In addition, this machine can also be used to poison insects on plants. By the way farmers change the water in the pump container with pesticides. Globally, pesticides are used in rice farming has been accounted for nearly 15 percent of the amount of pesticide used for another crop production [1]. In Malaysia, the use of pesticides is an option first for farmers to control attacks conventional pests especially in Paddy plantation. Spray the poison into one practice and served as a form of assurance to ensure the construction of a war of a kind the most frequent pests attack Paddy field. To deal with the problem and increase paddy production, consumption types of modern rice varieties, use of fertilizers, pesticides pests, water and other technology intensive which is practiced by farmers to some extent has changed the ecology and there has been an improvement insect pest. [1]

In addition, there are many improvements on this machine to delight farmers in doing their work. For example, this machine has two functions, namely watering and poisoning pests. For watering gardeners can use to water the flowers or fertilize even once. if the gardener wants to water the crops, the gardener should fill the bottle with water in the machine while if he wants to cultivate, the gardener should change the water to a mixture of fertilizer. For poisoning, farmers must change the water with pesticides and the method of use is the same as watering the trees.

The objective here is to create a gardening machine that can help gardeners do their job easily, not take a long time and save costs because part of this project we use used materials such as old bicycle tires. In addition, this machine will use hollow iron. decided to use this iron because of its high strength and reasonable price. In addition, we also use a sprayer it is used to water the plants.

1.2 Problem Statement

1. Existing pesticide sprayers are heavy and difficult to carry. So, if these farmers use it will cause the farmers to use a lot of energy to lift the existing pesticide sprayers and it will also cause the farmers to feel pain in their waists. Therefore, it is not suitable for older farmers.
2. Pesticide sprayers are less efficient because they are only supplied with one host and one nozzle to spray. If using an existing pesticide sprayer, farmers must point the spray nozzles towards the trees one by one. This causes farmers to need a lot of time in their gardening.