

UNIVERSITI TEKNOLOGI MARA

**DESIGN AND FABRICATION OF
THE AGRICULTURE SPRAYER
MACHINE**

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ABSTRACT

Sprayers play an essential role in agriculture today, involvement in chemical spraying. Alongside, the problem statement for this project is the sprayer existing has a low efficiency since it has only one nozzle and carries a heavy load causing back pain to the operator. Other than that, the objective of this project will feature more than one nozzle, which will increase spraying efficiency and reduce human effort by continual pumping to create pressure within the pesticide sprayer. Last but not least, the expected result is it will reduce the time to spray since it will have more than one nozzle because a multi-nozzle is used, indirectly a wider area of the field may be sprayed at a faster rate.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

The sprayer is well known by all people nowadays. Sprayers play an essential role in agriculture today. The sprayer's primary role is to break the liquid into effective-sized droplets and distribute them equally over the covered surface [1]. There are many types of sprayers have been invented up to the year 2019, including the Plastic Knapsack Sprayer, Pressure Water Sprayer, and Typical Garden Sprayer. Gardeners and farming sectors often use these sprayers to spray pesticides, herbicides, or water their plants in farms and gardens [2].

1.2 Problem Statement

As we all know, the pesticide sprayer is the most common method sprayed used in the agriculture section. Plastic Knapsack Sprayer is a backpack type of pesticide sprayer, which is it has a flat or bean-shaped tank of 10 until 20 liters capacity.[3] The operator must carry the heavy tank at the back and use more force to oscillate the lever. Moreover, the operator also needs to hold the nozzle when spraying out the pesticide. Aside from that, a fuel-operated spray pump is an invented spray that is heavier than the backpack type. A fuel-operated spray pump is using petrol engine. As we all know, petrol is one of the most expensive fuels, and its engine causes undesired noise and vibrations, both of which are harmful to the operator's back muscles. [4]

Other than that, the sprayer existing has a low efficiency since it has only one nozzle to spray out indirectly it sprayed at a slower rate. Thus, it takes a long time to finish the sprayer work.