

**UNIVERSITI TEKNOLOGI MARA**

**DESIGN AND FABRICATION OF  
AGRICULTURAL WHEEL SPRAYER**

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## **ABSTRACT**

The main purpose of producing this product is to enable farmers and gardeners to make the process of spraying waters, pesticides and herbicides to their gardens becomes more effective. It helps the farmers and gardeners work because they no longer need to carry the tank on their back that can cause their back strain and hurt. This product only has to be push to forward just like how the trolley function and then it will generate mechanically pump by the set of power transmission part by using shaft, bearings and set of sprockets. Energy to pump the tank pump can be reduced. Next, it also comes with a some of nozzles on the wing. With nozzles on the wing, it can speed up the spraying process as it can spray left and right side at the same time. In conclusion, this product can help farmers gardeners in terms of comfort during spraying, reducing energy to pump tanks, and effectively utilizing spraying time. The expected result for this project is, with this project the farmer will take less time and energy in spraying process.

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of Study**

Pest control and crop nutrition are extremely delicate areas of farm management because crop production is always subjected to dynamic and unanticipated obstacles. As a result, farmers are frequently under pressure to find an appropriate and cost-effective solution to both these crucial issues. Fortunately, advances in farm technology have resulted in a wide range of agricultural sprayers that can be used for foliar fertilization (applying nutrients directly to the plant's leaves) as well as insect control. Agricultural sprayers are pieces of farm machinery that are used to apply liquid fertilizers and insecticides to crops during their growth cycle. From hand-held and manual sprayers to huge trailed or mounted sprayers with advanced atomizers, these wonderful farming tools are available in a variety of sizes and types. In other words, each farmer has the option of finding a spraying solution that meets his farm's individual demands.

### **1.2 Problem Statement**

Each of the agricultural sprayer kinds has its own set of benefits and drawbacks. The manual sprayer, for example, is a simple piece of farming equipment that is both economical and accessible to all farmers. These, on the other hand, are better suited to smaller surfaces. Otherwise, the application would be time-consuming. It also said to be inefficient as the farmer must carry the entire weight of the sprayer and pump (approx. 20+kg) on their back that can cause them back pain. Mechanized sprayers, either trailed or mounted on a tractor, on the other hand, are more productive and require less labor. Even still, many small-scale farmers have resource constraints. As a result, they consider mechanized sprayers to be an excessively pricey investment.