

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT OF A PROTOTYPE
OF RICE WASHING MACHINE**

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ABSTRACT

Rice is the most common ingredient in every meal for Malaysians. However, the process of preparing the rice is quite problematic, especially for the seller who sells rice products. Before cooking rice, it is customary to wash the rice. When trying to wash on a large scale, such as for food operators, catering, restaurants, and other businesses, it might be difficult. Their task will be made easier with this project in terms of time, effort, and quality of rice hygiene. Preparing it requires a lot of energy, time, and cost. To avoid the problems faced by the seller, an automatic rice washing machine is made. This machine will also produce better quality and clean rice in a short time. To fully comprehend the mechanism employed, this project calls for design expertise, dynamic theories, the selection of appropriate materials that may be utilized, extensive research, and the study of other comparable machines. Additionally, it has a furniture stick rubber guard on it so that it won't move once the task is finished. It is also portable and lightweight. After the test, the scope can hold up to 5 kilograms of rice in addition to the capacity. This can reduce the need for global catering labor and save time. The all-purpose mop concept is too similar in terms of design and production. At the end of the project, the automatic rice washing machine needs to function properly. The water flow system should work correctly. In conclusion, this automatic rice washing machine will be of greater assistance to those who require it, such as small businesses or vendors of rice-related goods, as they will be able to use a much simpler method of washing rice without spending an excessive amount of money because the machine's price is still within reach.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Rice is the main ingredient in most of the meals in many countries, especially Malaysia. In Malaysia, many meals use rice such as Nasi Lemak, Nasi Dagang, Nasi Kandar, and Nasi Goreng. These meals consist of rice to complete the recipe making. Those meals can be found everywhere in Malaysia. Even fancy restaurants still include rice on their menus. Most people are selling rice to gain income as their source of money since it is the main food in Malaysia.[14]

However, the rice that is used to make the meals should be cleaned and rinsed with water to wash excess starch, dirt in the rice grains, and arsenic content that can be found in the air, water, and soil from the rice reservoir. This cleaning is taking a lot of time for the seller to clean the rice in large quantities. The rice cleaning process for the family serving is by rinsing the rice about 3 to 4 times and 7 to 10 minutes to make sure that the rice is cleaned [5]. But it takes a longer time for the larger quantities to clean the rice. It required a lot of energy and time for the person to wash the rice every time they did it. Some of the sellers do not know how to wash a large amount of rice properly. For a new seller who just starts selling, it is more challenging for them as they need to get used to contributing a lot of energy and time in this process. If this problem happens daily it can drain the seller's energy and can cause health problems to them. Besides, they will waste a lot of time on this process [6].

All these problems can be avoided by using the rice washing machine. The rice washing machine will be made using stainless steel and have many functions that can ease the washing of the rice for the seller. The rice will be put inside the pot-like rice washing machine and it will auto rinse the rice until it is clean. This machine is used by open the water valve of this machine, this machine will be generated and use a strainer to filter and separate the rice and water. This machine can be run without observation.[15]

As this machine will be in contact with water a lot, the material will be made out of stainless steel. This machine will also conclude the rotating element and motor