

**UNIVERSITI TEKNOLOGI MARA**

**AUTOMATED INGREDIENT MIXER  
MACHINE**

**AIMAN SHAFIQ BIN ZAINUDIN**

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## **ABSTRACT**

At Jalen Sdn. Bhd. factory, the ingredient mixing process was done manually. The worker will start by pouring out all the ingredient into a mixing bowl and the other operator will be started to mix the ingredient until it achieves the wanted product. In this era, manual process will delay the production time and can consume a lot of manpower to complete some process. To solve this problem, an Automated Ingredient Mixing and Dispenser Machine is created. The main objective for this project is to reduce the manpower needed in the production process by making a machine that is simple to be operated. The study for the mixing machine includes some theories and principles that will be used in the making for the mixing machine. This machine will work with a dispenser that dispense the ingredient automatically. Then, the ingredient will flow through a modified funnel to the mixer machine that will automatically mix the ingredient until it mixed well. This study will be matched accordingly to satisfy the main objective. The result from this project are the number of operator is reduced to only 1 person to operate the machine. As this machine can help the to complete the process of mixing, dispensing, and carrying the ingredients to the next process, there were no need for another operator to divide their work. Moreover, the time are also reduced to 30 minutes per batch production. This is due to the action where the machine minimized the process of mixing, dispensing, and carrying the ingredients to the next part where the manual method before taking a duration of 1 hour per batch production. Thus, the automated ingredient mixing, and dispenser machine can solve the problem that faced by Jalen Sdn. Bhd. and can increase the efficiency of the process hence, increasing the production rate.

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of Study**

Jalen Sdn. Bhd. is one of the manufacturing companies in Malaysia. Jalen Sdn. Bhd. a company that have been established since the year 1981 and have already started to export their food product to other countries around the world. However, Jalen Sdn. Bhd. started to have some difficulties due to high demand of the halal made product. In order to provide enough supply for the demand, Jalen Sdn. Bhd. have faced the difficulties to keep up their mixing process steadily throughout the day to complete the production. Previously, a manual method is used for the operation of mixing process in the factory. The operator will single-handedly control the mixing machine in order to mix all the ingredients evenly. This method consumes a lot of time to make the mixture.

Therefore, this study is made for Jalen Sdn. Bhd. to solve the problems in the production. The machine will help minimized the manpower needed and the time for the mixing process with the application of automatic ingredient mixing machine. The part where the ingredients are dispensed and distributed into the mixing bowl are left out of account.

### **1.2 Problem Statement**

Towards the fourth industrial revolution, there a lot of advanced machines that have been created to clear up the problems that been faced by society. For Jalen Sdn. Bhd., one of the problems that occur is in the ingredients mixing process. Ingredient measurement and mixing process are one of the key processes to complete the production of soy sauce, ketchup, chili sauce or drinking syrup. At this stage, the mixing process is manually operated by the operators. The existing mixing process required the operator to personally bring the accurately measured ingredients to the mixer. This process is repeated for the rest of the cycle for the ingredient needed until the production for the batch complete. As the process repeated and single manually operated, this process has consumed a lot of time and sometimes can lead to inconsistency in the