UNIVERSITI TEKNOLOGI MARA

SEMI-AUTOMATED INGREDIENT DISPENSER MACHINE

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ABSTRACT

Dispensing multiple granular ingredients with low margin of error of amount is a hustle and fussy kind of work, faced by the operator at Jalen. Doing it repetitively for a long period of time will cause inconsistency of measurement and require a lot of energy to focus. Idea of semi-automated ingredient dispenser machine is generated to reduce the probability of error happen throughout the measuring process which at the same time reduce manpower. Roughly, process of making this machine started with generating few concepts design and simulated in a CAD software. Then the process continues to fabrication process which include several machining works include measuring, cutting and joining. Programming and electronic works also run in parallel with the fabrication process. Few key decisions are taken so the machine can overcome all the problems stated. In result, the machine is able to measure and dispense accurately as plan by reducing percentage error to at most 1%. However, elimination of manpower was not achieved, this machine is able to reduce it to only one operator.

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INTRODUCTION

1.1 Background of Study

Jalen Sdn. Bhd. is one of food production company that produce and supply halal products vastly in Malaysia. The brand of Jalen Sdn. Bhd. is widely known and well accepted internationally as a halal food supplier especially in the middle east country. With the increasing demand of halal food, Jalen Sdn. Bhd. must step up their game to cope with the demand and make their product available on the retail shelf as soon as possible.

With the current production process at Jalen Sdn. Bhd, it is quite difficult for them to maximize their production rate and cope with the high market demand. At the current moment, most production process at Jalen Sdn. Bhd. factories are manually operated starting form with the ingredient measurements, mixing, labelling, and packaging.

In this study, it will focus on the improvement on the ingredient measurement process. As per now, the process of ingredient measurement has been done manually by single man operated which leads to hiccup, delay in production and inconsistency of the taste in the final product. This study will help to tackle and improve the problem that they faced right now.

The improvements on the process will involve such as automation to the measuring and mixing process can boost the production rate of their product. Whole process can continue to run with less dependency to the human operator, then will minimize number of errors happen and delay the production process. Thus, the demand can be fulfilled, and the company can continue to excel in food halal industry locally and globally due to continuous supply to the market.