UNIVERSITI TEKNOLOGI MARA

DESIGN AND FABRICATION OF SEMI-AUTOMATIC LEMANG COOKER

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ABSTRACT

Machines are a tool to help people in their daily lives. Machines make work a lot easier in terms of time, human energy, etc. This is applied to every human's daily life including industrial cooking and home cooking. For example, lemang. Lemang is a traditional dish that is cooked in a hollowed bamboo stick on the fire. The problem with lemang preparation is to cook it. One of the problems is uneven combustion because it is hard to control fire and lemang rotation at the same time. To solve these problems a semiautomatic lemang cooker has been designed and fabricated. The design and fabrication of the semi-automatic lemang cooker provides a valuable contribution to traditional cooking practices, by combining traditional methods with modern automation to enhance cooking time, evenly cooking and user friendliness. The project goes through a design process using Solidworks and fabricates using drilling, cutting, grinding, and welding process. The materials that will be used are cast iron, aluminium, can, chain etc. The outcome to this project is to design the semi-automatic lemang cooker using solidworks and to fabricate the semi-automatic lemang cooker as a proof of concept. It is concluded the expected result for this project is to cook lemang evenly, user friendly and saves space.

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CHAPTER ONE INTRODUCTION

1.1 Background of Study

Lemang is a traditional dish from Malaysia and Indonesia made from glutinous rice, coconut milk and salt. Lemang is cooked in a hollowed bamboo stick over an open fire. Lemang is very significant with celebration feast during the festival such as Hari Raya Aidilfitri and is usually served with rendang or kuah kacang. It is not only a delicious meal, but it is also a symbol of unity and togetherness.

One of the main problems with cooking lemang is uneven combustion. It is also hard to control the fire and lemang rotation at the same time. It is a must to make sure that the rice is cooked evenly and thoroughly. Because the lemang cooked in a hollowed bamboo stick, the heat must distribute evenly to ensure that the glutinous rice is cooked properly. The rotation of the bamboo stick is the main point to make sure that the heat was transferred evenly to every side of the bamboo stick. When using the traditional way to cook it, skill and experience is important to overcome this problem.

To avoid or overcome this problem is by making a semi-automatic lemang cooker. This project will help people to cook lemang better than used a traditional way of cooking. This project will help to rotate the lemang evenly and reduce time cooking it.

The aim of this project is to explore the performance characteristics and applications of semi-automatic lemang cookers. It will investigate factors such as rotation of the lemang, heat transfer, quantity of the lemang and space. The findings from this study will contribute to simplifying and optimization of semi-automatic lemang cooker, leading to improved efficiency and quality in lemang cooking.