

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT OF A BAMBOO
HOLLOWER MECHANISM**

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Dissertation submitted in partial fulfillment
of the requirements for the degree of
Diploma
(Mechanical Engineering)

College of Engineering

Feb 2023

ABSTRACT

In this current era, people still using many furniture and tools from bamboo tree especially Lemang seller where the bamboo is used as the utensils to cook Lemang and there is not many tools or mechanism which can help the seller to cut the inside of the bamboo tree and make it hollow which is why this mechanism is being made to help solve this problem and also can cut the bamboo easily where this mechanism will be drilling the center of the bamboo without anyone holding it and the bamboo can be cut safely without any risk of injury and can be cut cleanly. Bamboo plant is a plant used for different purposes which include furniture, decoration, and food preparation. In food industry, bamboo is used as a casing for lemang. The lemang sellers need to cut the bamboo according to the required length and clean the inner part of the bamboo manually before filling them with rice and coconut milk. This project focuses on the development of a bamboo hollower that cuts and clear the inner part of the bamboo. The products use a rotational mechanism by the use of a sprocket. This product helps minimizes the amount of work and time required to clean the bamboo thus increasing the productivity. This product is beneficial for the lemang sellers and other industries that utilized bamboo as the main material.

ACKNOWLEDGEMENT

First of all, I wish to thank Allah for giving me the opportunity to do and take the chance to further my studies in the Diploma and also to my parents who never give up and always support me in my journey in these studies. Also thank you to Sir Norhisyam Bin Jenal as my supervisor for this subject which never lack in giving us guidance and answer any questions that is thrown to him.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Bamboo is one of Malaysia's most important non-wood products. It is a type of plant from the grass family (Graminae) and in the sub-family Bambusoideae. There are 75 genera and more than 1200 species of bamboo worldwide of which 14 genera can be found in the tropical zone of Asia (FAO, 1978). The Chinese were the first to use bamboo to make chairs, flutes, bridges and stools. Due to their strength and decorative nature, bamboo pieces soon spread to the West. The Americans loved the species' ease of transport, as it was light and easy to pack. Bamboo is widely used and has a very high demand because the styles and designs are endless. There is not a single design of furniture this plant cannot be used for. Chairs, tables, shelves, stools and almost any other type of furniture can be made from the material. There is a variety to choose from in terms of colors as different shades of brown, green and yellow are easily available.

Other use for the bamboo is as the utensils to cook one of the signature dishes in Malaysia which is Lemang. Lemang is made from glutinous rice, coconut milk and salt, cooked in a hollowed bamboo tube coated with banana leaves in order to prevent the rice from sticking to the bamboo. Lemang is a food with a high demand especially when Hari Raya Aidilfitri is celebrated and Lemang is the traditional cuisine that a must in the celebration for every household.

The machine or mechanism that has existed mostly only help in cutting bamboo in half or in pieces to make furniture and there is none to cut the inside of the bamboo to make it hollow. Lemang seller mostly cut or drill the bamboo by themselves either with a traditional way which time consuming or using hand drill which is quite dangerous as the seller need to hold it by hand and drill it. The mechanism that I proposed can help with drilling the bamboo to hollow the inside and also can cut it.