



اَبُو سَيِّدِي تَيْكُونُو لَوِي مَبَارَا  
UNIVERSITI  
TEKNOLOGI  
MARA

EM110 DIPLOMA OF MECHANICAL ENGINEERING  
FACULTY OF MECHANICAL ENGINEERING  
UiTM CAWANGAN JOHOR, PASIR GUDANG CAMPUS

## MEC332 MECHANICAL ENGINEERING DESIGN

**PROJECT:**

COCOMILK EXTRUDER  
PORTABLE COCONUT MILK EXTRUDER

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## **CHAPTER 1: INTRODUCTION**

### **1.1 Problem Statement**

Coconut milk used in cooking many various foods. Chefs and housewives mainly use coconut milk during their cooking session. Getting a coconut milk is easy in supermarket but they prefer fresh coconut milk that already processed. For processing the coconut milk, they need a lot of time and use a lot of energy during squeezing the coconut husk into coconut milk and it takes a lot of process. So, we came a solution to make a portable mini coconut milk extruder that can use in house and small food industry that we called Cocomilk Extruder.

### **1.2 Objectives**

- To reduce the time taken for processing the coconut milk.
- To increase the quantity of coconut milk.
- Make it portable for house use.
- Produce a quality coconut milk.

### **1.3 Significance of the project**

Our product or also known as “Cocomilk Extruder” can help to reduce the time taken for processing the coconut milk from the coconut husk and use less consumption of energy. Furthermore, this machine also can be used anytime especially during cooking time. Other than that, this problem really hard to overcome mainly at small food industry. Due to wrong estimated amount of coconut milk during cooking session. Therefore, they lack of time to do such things. So, by using this machine that problems can be solve. Besides that, this machine is easy to operate, handle and carry. We will sell this product at a low cost compare to the market mainly to help them solving their problems. And it can be carried to anywhere because it’s portable. And it’s easy to do maintenance.

## **CHAPTER 2: DESIGN PROBLEM DEFINITION**

### 2.1 Market Analysis

#### **2 1.1 Targeted Market and Estimation of Market Size**

Targeted customer is housewives and small food industry as the problem statement. Basically, this machine provides save time and energy by the customers. The market also be for people who want to start in cooking industry because they will have the same problem as the housewives and small food industry as they want the coconut milk in a short time. Based on our survey, there is a product that have same function as our product but mostly for large cooking industry due to large size.

Besides that, the price is quite high which is around RM 200 and above while our product only under RM100.

For the market size, before this we have done some survey that ask the customers some questions due the project specification and fortunately, we accept such a good feedback. In this survey we got a lot information about the product such as the size, material and features of the product.

Have you ever used a product like this before?

40 responses

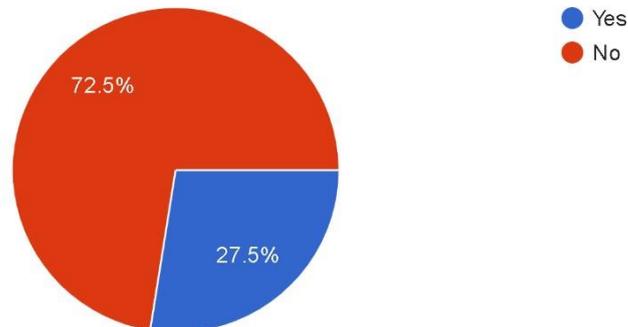


Figure 2

## CHAPTER 7: CONCLUSION AND RECOMMENDATION

### 7.1 CONCLUSION OF DESIGNED PRODUCT

The designed prototype for this project is considerably seems as a successful build or project. It fulfilled every criterion set by faculty of Mechanical Engineering, UiTM Pasir Gudang which focus on the innovations and inventions that can be used as a home appliance. Besides that, it also fulfilled the criteria of team members which the main task is to have a convenient and reliable model for teaching and learning aid. The prototype is built due to the lack of understanding of the true meaning of mechanical engineering among students specifically thus looking in striving for a better and new knowledge also experience for Mechanical Engineering students. Here are the stated some the pros and cons obtained through the process of making the project.

In the aspect of the pros that are obtained through the project, during the designing process of the project thoroughly, there are many things that each individual in the project team experienced and most of it are new to the project member. First of all, the team members experienced many problems and instant decision-making process and these processes where the importance of critical thinking is proven. Creating and planning a solution to identify all the need or problem in an innovative manner and defines a standard for others to follow. Providing from the very basics where the process of the fabrication flow process obtained from brainstorming process between team members to gives a very significant impact on each individual knowledge and basics of designing and fabricating a product. Therefore, there are many things that are reflected on the team during the design period. The most important of all the soft skills obtained through teamwork and communicating between group members could enhance the skills required in the working fields. Basic skills of Solidworks and fabrication process such as welding, grinding, cutting, molding also are learned throughout the project.

For the aspect of the cons obtained during the entire project's fabrication and designing process, it cannot be ensuring that everything will go according to plan and meet the expectation, especially on the fabrication because it involves hand on application which need more skills rather than calculation and theory-based assumption. The hard reality of engineer insignificantly proven especially the process of fabrication. Going through all the hardship and endurance, the best design of coconut milk extruder machine according to the theme was able to be achieved by the project members.

Therefore, this prototype results show that it is ergonomics also suitable for every range of customers and it has a high potential to be place on the many small industry nowadays. A non-stop improvement is needed for this design in order to ensure that the design performs as expected and satisfy the market whole fully. To conclude the whole chapter of the entire process, the project members are able to meet the expectation and delivers the very most of the skillset among the group members and are fully devoted in making the project reliable and customer-friendly.