

**UNIVERSITI TEKNOLOGI MARA**

**DESIGN, ANALYSIS AND FABRICATION OF  
SEMI-AUTOMATED POTATO PEELER  
MACHINE**

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## **ABSTRACT**

Nowadays, people like to wasting their time and manpower to do simple chores eventhough many automatic machine have been invented. Such as, peeling potato, mostly people love to peel with knives rather than using automatic machine. However, peeling potatoes is a critical unit procedure in the potato processing industry. As a result, a semi-automated potato peeler and slicer machine was designed and created. Then, a semi-automatic potato peeler machine will be created for small-scale/household use. The major goals of this research were to improve current mechanical peeling methods and develop innovative mechanical ways for skinned vegetables that are near to "ideal" peeling circumstances using mechanical characteristics of the product. The machine's accuracy was evaluated using three locally grown potato varieties of different sizes: size A, size B, and size C. The peeling process was recreated in a mathematical model, and the main influencing factors were found. The parameters are either connected to the product or to the peeler. These parameters manifested themselves as coefficients in a linear regression model.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of Study

*Solanum Tuberosum* L. or simply known as potato is the third most important multifaceted staple crop in the world especially in India(1). The production of potatoes in India was 40,476.30 thousand metric tonnes in 2010 to 2011. As we know India is a highly populated nation that will have about 1.3 billion people approximately in 2022 . Hence, potato is the only crop that can make an impact on the populated Indian nation for feeding the people. In addition, India also holds the ranks third in global potato production when it produces around 8 % of the world's total produce based on anonymous research in 2011. All the potatoes basically goes to their own people's mouths rather than being exported, making India's share in world export negligible.

As the potatoes grow famous day by day, more types of snacks and food exist that contain potatoes invented by the people around the world such as potato chips. For making the chips, the most important preparatory operation is peeling the potato skin. There are two methods that can be used to peel the potato either using traditional methods or modern technology like machines. Traditional method is designed to be more easy to handle and a lot safer. Nonetheless, it will use a lot more manpower, tedious and time consuming. With modern technology, machines will be used to peel potatoes. The machine will be equipped with a razor knife located at the side of the product that should be peel, especially potato. Meanwhile, the bottom of the machine will be the holder of the potato. Just like traditional methods, machines also have their disadvantage when it comes to cost and its maintenance.

The goal of this project is to innovate and fabricate the existing machine so that it not only peels the potato but also cuts it into small pieces for easier use in cooking. Furthermore, on a low budget, this project also created an opportunity for everyone to get the machine in a low cost. In addition, this semi-automatic potato peeler machine is portable and easy to use.