CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Frying nowadays has been one of the most important cook methods in the world. By using this method it can transfer heat from the pan to the food being cooked. Today, consumers more interested for a snack food that have a healthy criteria such as lower oil content but still retain the texture and flavors.

Vacuum frying is a method to production of fruit and vegetables snacks with low oil content and the good texture and flavor characteristic. It is defined as a frying process under vacuum pressure. When the pressure lowering, the boiling point of the oil in the food is lowered and the oil temperature also lowered than frying at atmosphere condition. Vacuum frying have some advantages, first it can reduce oil content in the fried product. Second it can preserve natural color and flavors of the product depend to the low temperature and oxygen content during frying process and third it has less adverse effect on oil quality.
1.2 PROBLEM STATEMENTS

In recent years, snack foods industries tend to produce lower oil content that still maintain the desirable texture and flavors. Because of consumers preference for low fat and fat free products is increased. Oil content in the snack is higher when use atmospheric frying. It also tends to be damaged natural color and flavors of the product due to the high temperature and oxygen content during the process.

For decades, consumers have desired deep-fat fried products because of their unique flavor–texture combination, ranging from potato chips, French fries, doughnuts, extruded snacks, fish sticks, and the traditional-fried chicken products. In 2000, Americans spent $110 billion on fast foods, with fried foods playing an important role. Americans consume about three hamburgers and four servings of French fries per week. However, the increased awareness of consumers to the relationship between food, nutrition, and health has emphasized the need to limit oil consumption, calories originating from fat, and cholesterol among others.

Today, consumers are more interested in healthy products that taste good. Fried products are produced today using non-hydrogenated oil, and contain no saturated fat and no trans-fats. Some of these products (sweet-potato chips, apple chips, potato chips-blue) are fried under vacuum yielding less oil absorption with higher retention of their natural color and flavors.

Vacuum frying is an efficient method of reducing the oil content in fried snacks, maintaining product nutritional quality, and reducing oil deterioration. It is a technology that can be used to produce fruits and vegetables with the necessary degree of dehydration without excessive darkening or scorching of the product. In vacuum frying operations, food is heated under reduced pressure [<60 Torr = 8 kPa] causing a reduction in the boiling points of the oil and the moisture in the food.
1.3 PROJECT OBJECTIVE

There are objectives that should be achieved in the end of the project. The objective of this project is to design and development of a vacuum frying to produce high quality fruit and chips for example potato chips in terms of reduced oil content, good texture, and color.

1.4 SCOPE

There are 3 scope determined to make sure all the objectives can achieved. These scopes are:
1. Literature review of the vacuum frying.
3. Fabricate the prototype of product

1.5 CONCLUSION

This chapter described about overall introduction of this project. Background of this project will discuss after defining problem statement. Then, scopes and objectives of this project is determined as a guidelines of the project. Structure of thesis described about synopsis of every chapter of this thesis.