

CHAPTER I

INTRODUCTION

1.1 Background

Parevine is made from a combination of food fats, water, protein and carbohydrate. It is a frozen dessert which the ingredients are not sourced from meat, animal milk, and its derivative products (Shurtleff and Aoyagi, 2013). It is commonly consumed by vegetarian, milk allergic and lactose intolerance people. Parevine usually known as plant based frozen dessert. There is similarity in the process of making parevine with ice cream. It includes several steps, which are preheating, homogenization, pasteurization, aging, and hardening as well as from the various components used in the formulation (Goff, 2013). Ice cream commonly made from dairy milk products, sugar, water, stabilizer, emulsifier and flavorings to add flavor richness (Clarke, 2004). Milk fat has protein components which are the key ingredients of ice cream. The protein in ice cream will give ice cream its characteristics, texture, and creaminess. It also contributes to the richness flavor and provide energy. Because there are similarity between parevine and ice cream as frozen dessert, fat content is an important parameter in the making of parevine. Unlike Ice cream, the milk fat substitution in parevine can be from soymilk. Soymilk can be derived from any kind of soybeans, one of the examples is edamame milk.

Edamame (*Glycine max* L. Merr) also called vegetable soybean it belongs to the same species as the traditional grain soybean. Edamame is a traditional component in diet also in Japan. It is valuable due to high protein, fat, phospholipids, phosphorus, calcium, iron, thiamin, riboflavin, vitamin E, diet fiber

and isoflavone content (Soewanto et al, 2007). Many nutritional and health benefits people can get by consuming edamame in daily life.

Obesity has been a big concern, nowadays. People need to pay attention with what they consume. To prevent or reduce number of obesity people need to diet. Low intake of calories needs to be conducted to help diet. Rice flour is one of the substitutes of fat replacer in ice cream. Rice flour is made from finely milled rice. Rice is hypo-allergenic, gluten free, and bland in flavor.

1.2 Research Problem

Ice cream as we know is a frozen dessert that most people like and consume. Important ingredient of parevine are milk fat and stabilizer. Milk is a dairy product that is produced by mamals. However, some people may have problems in consuming dairy product. People with lactose intolerance, milk allergy and vegetarian can not consume milk. Common frozen dessert that are made from plant based is parevine. With the development of research, people discovered an alternative to milk which is soy milk. Soy milk is made from soy bean. There are many types of soy bean that can be used to produce milk, one of them is made from edamame beans.

Edamame is an immature soybean that is being harvested before beans turn yellow. People consume edamame to get health benefit, such as reduce the risk of cardiovascular diseases, reduce blood cholesterol, prevent cance, reduce osteoporosis, alleviate diabetes, and increase bone density. Edamame contains of

high protein and fiber. Edamame in this research will be used as source of fat in the making of parevine. Research of parevine made from edamame milk based on water and edamame ratio is still rarely found.

Public concern over ice cream consumption arises because of the high fat content found in ice cream. Fat can cause various diseases including obesity, cholesterol, and cardiovascular disease among others. However, rice flour can act as an alternative substitute for fat by its performance as a stabilizer in the making of parevine. During the process, the most generally used stabilizer is either CMC or gelatine. In addition to that, it should be noted that rice flour is gluten free and thus beneficial for people who have celiac disease. Concentration of stabilizer use to make parevine will affect characteristics of parevine. There has been no study regarding the usage of edamame milk and rice flour stabilizer to make parevine. Therefore, the research will investigate the usage of edamame milk and rice flour as stabilizer. Different ratio of edamame milk mixture and different concentration of rice flour stabilizer in the making of parevine are expected to elevate the functionality in parevine.

1.3 Objectives

1.3.1 General Objective

The general objective of this research was to use edamame as the source of milk fat and rice flour as the source of stabilizer in the making of parevine.

1.3.2 Specific Objectives

The specific objectives of this research were:

1. To determine effect of different ratio of water and edamame beans in the making of edamame milk on its physicochemical characteristics.
2. To determine effect of rice flour as stabilizer in edamame parevine on its characteristics of the parevine, and to select the best formulation in terms of physicochemical characteristics.
3. To determine effect of selected formulations on organoleptic of the parevine, and to select the best parevine to be analyzed in terms of chemical composition.

