CHAPTER 1

INTRODUCTION

1.1. Background

Es puter is a traditional coconut-milk based cold dessert originated from Indonesia. Indonesia's ice cream retail market holds the second-fastest growth compared to other developing countries such as India and Vietnam between 2012 to 2016 (Mintel, 2016). According to Ayuningsih and Hardiman (2008), out of various types of ice cream in Indonesia, coconut milk-based traditional ice cream locally called as *es puter,* or *es dung-dung* remains popular among middle to low income-demographics due to its affordable price compared to dairy-based ice cream. Since it is produced using traditional methods, there are limitations to the quality of the final product. Due to the traditional methods having limited air incorporation, less free water homogenization, the dessert can develop some undesired qualities such as an icy texture and the production of a rancid aroma after a short storage period (Tarwotjo, 2007). Currently, in the Ice Cream industry, dairy-based ice cream can incorporate a food stabilizer or stabilizers to reduce the development of undesired qualities. These stabilizers work by facilitating the ice cream matrix to have enhanced bonds and more resistance towards heat, however, currently the application of food stabilizer in coconut-milk based ice cream is not thoroughly studied (Deosarkar *et al*, 2016). In this study, the coconut milk-based cold dessert that was chosen as the subject of this research is: of *es puter* manufactured by UD. Air Hidup. In the preliminary study, research was conducted to evaluate the applicability of several food stabilizers in *es puter* through sensory analysis such as texture, ice crystal, coconut aroma, taste, and rancidity. Out of the aforementioned stabilizers incorporated to the formulation, carrageenan and guar gum were found to be the most suitable stabilizer that added into the ice cream mixtures, through sensory analysis it was found that the combination of the two stabilizers resulted in a product which was thicker, had enhanced creaminess, had better aroma delivery, and most importantly had the desired ice crystals. Other stabilizers could also be incorporated into the product, such as xanthan gum and carboxymethyl cellulose (CMC). However, it results product had a slimy

mouthfeel, taste, and aroma alteration into the ice cream properties. Thus, they were eliminated. Although the desired reformulated ice cream has been found, the addition of stabilizers may also alter its shelf life as it normally happens in dairy-based ice cream (Marx *et al.*, 2008). Therefore, it is necessary to further evaluate it through a periodic acceptance test over three months storage in different storage placements: freezer and showcase storage commonly applied in ice cream company.

1.2. Objective

The main objective of this project is to determine the effect of additives based on acceptance of reformulated *es puter* compared to control through weekly sensory analysis.

1.3. Significance of the Research

The use of additives in coconut-milk based ice cream is still not explored enough yet, because generally the incorporation of stabilizer is used only in dairy ice cream. Therefore, further analysis should be conducted.