CHAPTER I

INTRODUCTION

1.1 Background

Rosemary (*Rosmarinus officinalis* L.) is a one the oldest herbs that come from Southern Europe and Middle East. Rosemary can be categorized as a medicinal herb and also culinary herb due to its main utilization as a medicine and as a seasoning in cooking. It also used as a fragrance, in cosmetics, and also used for ornament. In order to cultivate rosemary, it is best to grow in a cool condition with a good supply of sunlight, drainage, and also need a frequent misting for the humidity. The proper watering of rosemary plant is very important in which with underwatering and overwatering can result in rotting of rosemary (Reppert, 1996).

In the world, rosemary has already been used due to its functional properties as antioxidant and already accepted as one of the highest source of antioxidant due to its polyphenols content. The utilization of its essential oils also used as antimicrobial, antifungal, and also anticancer agent. To utilize its function to be more convenient is by the isolation and extraction of its volatile compounds such as flavones, diterpenes, steroids, and triterpenes (Genena, *et al*., 2008). In Indonesia the cultivation of rosemary is still very low. Rosemary in Indonesia mainly can be found in the form of dried ones, it is still not commonly known either. It means in Indonesia, the consumption and knowledge about rosemary are still very limited. Therefore, utilization of rosemary needs to have a further development.
One of the ways to improve the utilization of rosemary is by making it into a beverage product that can be consumed easily by people. Nowadays in Indonesia beverage products are very popular even as a ready-to-drink or instant because it is very practical and can be found almost everywhere. In the making of rosemary drink there are other ingredients used such as sugar and acid from lime juice in order to give more acceptable flavor and aroma to the drink. The other ingredients are added due to rosemary pungent aroma and tasteless when brewed that some people may not like. Therefore, by making rosemary drink with the addition of sugar and acid are expected to improve its consumption and acceptability by the consumers.

1.2 Research Problem

In Indonesia, people nowadays have begun to know rosemary as an herb plant that has many benefits. But, the utilization of rosemary is still limited to medicinal uses, extract of its essential oils, and for culinary uses as a seasoning. Its utilization as an extract of its essential oils is the most functional one due to its benefits towards the human health and more convenient.

The research about the benefits of rosemary has already been done about its total phenolic compounds and antioxidant activity of rosemary extract by Tavassoli and Djomeh (2011), and also the effect of drying towards its flavor quality by Rao, et al. (1998). However, its development as food products is still limited. The recent development is making the rosemary extract and use it as a seasoning in snacks. Therefore in this research, the rosemary was processed into a beverage product to increase its utilization and consumption. In order to give
more acceptable flavor and aroma, because rosemary itself has a strong distinct flavor and aroma, other ingredients such as sugar and acid from lime juice will also be added into the formulation. Thus, it is expected from this research to know the formulation of rosemary drink that has the highest antioxidant activity and acceptability by the panelists.

1.3 Objectives

The objectives of this research are divided into two, which are general objective and specific objective.

1.3.1 General objective

The general objective of this research is to utilize rosemary leaves in order to be more beneficial by making them as a beverage product.

1.3.2 Specific objective

The specific objectives of this research are:

1. To determine the optimum drying temperature of rosemary leaves in order to obtain the best antioxidant activity, total phenolic content, and total flavonoid content of dried rosemary leaves;

2. To determine the effect of different concentration of sugar and acid from lime juice on physical and chemical characteristics of the drink;

3. To determine the most preferred formula of rosemary drink based on antioxidant activity, total phenolic content, total flavonoid content, and sensory analysis;
4. To evaluate and compare the antioxidant activity, total phenolic content, and total flavonoid content of rosemary drink made from fresh and dried rosemary leaves.