

CHAPTER I

INTRODUCTION

1.1 Background

Torbangun leaf (*Plectranthus amboinicus* L. Spreng.) and *Katuk* leaf (*Sauropus androgynus* L.Merr) are plants that are believed to have galactagogues properties (Damanik, 2005; Zakaria, 2012). Milk production stimulators or galactagogues is a substance that promotes and increases milk production such as drugs, herbs or foods. It works by increasing prolactin hormone levels which is one of the hormones that contributes to the release of breast milk (Wambach and Riordan, 2014).

Based on a research by Damanik (2005), *Torbangun* can increase the production of breast milk up to 65% and Rukmana (2003) also showed that *Katuk* leaf contains flavonoids that can trigger breast milk production. However, the consumption of *Torbangun* and *Katuk* leaves are still limited only to North Sumatran people and the utilization of *Torbangun* and *Katuk* leaves are still not optimal as it is mostly consumed in the form of fresh leaves or as vegetable soup.

Moreover, breastfeeding practices is beneficial for the mother as it delays the return of normal ovulation and menstrual cycle, helps uterus to contract, and lower risk of breast and ovarian cancers (Wambach and Riordan, 2014). However, low breast milk production is one of the challenges to optimal exclusive breastfeeding practice. This is usually due to inadequate suckling and breast emptying, low prolactin levels, or inadequate mammary glandular tissue.

Therefore, consumption of products with milk production stimulators or galactagogues properties is needed to increase prolactin levels and enhance milk production (Buttaro, *et al.*, 2012).

Due to the body's increased need for fluid while nursing, nursing mothers will have to increase consumption of food with high moisture content. Green grass jelly is a food with high moisture content food that is generally known and widely consumed by people in Indonesia. It is popular due to its refreshing taste and many health benefits. Also, it has high fibers content, anti-inflammatory and antioxidant properties due to high flavonoid and chlorophyll content (Singh, 2014).

One way of making green grass jelly is through a traditional method, using natural ingredients without preservatives. It is made from jelly obtained from the leaves of *Premna oblongifolia* Merr. or *Cycle barbata* L. Miers. In this study, the addition of *Torbangun* and *Katuk* into green grass jelly will encourage the consumption of *Torbangun* and *Katuk* as well as creating more varieties of galactagogues products. In addition, it can also be used to give health benefits to nursing mothers.

1.2 Research Problem

Torbangun leaf (*Plectranthus amboinicus* L. Spreng.) and *Katuk* leaf (*Sauropus androgynus* L. Merr) are believed to have properties to increase breast milk production for nursing mother. However, the application of *Torbangun* and *Katuk* leaves are still limited as it is mostly consumed in the form of fresh leaves

or as vegetable soup. Therefore, the *Torbangun* and *Katuk* leaves filtrates are added to green grass jelly to further develop a galactagogue product as well as enhancing the health benefits of nursing mothers. Finding the formulation is expected to increase consumer acceptability.

1.3 Objectives

1.3.1 General Objectives

The general objective of this research are to develop functional drink using *Torbangun* leaf (*Plectranthus amboinicus L. Spreng.*) and *Katuk* leaf (*Sauropus androgynus L.Merr*) and finding the best formulation of green grass jelly added with *Torbangun* (*Plectranthus amboinicus L. Spreng*) and *Katuk* (*Sauropus androgynus L.Merr*) leaves filtrates based on the nutritional content and organoleptic properties.

1.3.2 Specific Objective

The specific of this research are:

1. To learn the process of making with *Torbangun* leaf (*Plectranthus amboinicus L. Spreng.*) and *Katuk* leaf (*Sauropus androgynus L.Merr*) filtrates.
2. To learn formulation of green grass jelly added with of *Torbangun* leaf (*Plectranthus amboinicus L. Spreng*) and *Katuk* leaf (*Sauropus androgynus L.Merr*) filtrates.

3. To observe the acceptance of green grass jelly based on organoleptic properties.
4. To analyze the physiochemical properties (antioxidant activity, total phenolic content, total flavonoid content, protein, fat, carbohydrate, ash, moisture content, minerals, texture, color, and pH) of the chosen green grass jelly added with of *Torbangun* leaf (*Coleus amboinicus* *Lour.*) and *Katuk* leaf (*Sauropus androgynus* *L.Merr*) filtrates.

