

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Jamu is the Indonesian term for indigenous medicines usually prepared from herbal materials such as leaves, bark, roots, and flowers. Each of the more than 300 major ethnic groups that make up modern Indonesia has its own repertoire of traditional recipes, preferred ingredients and methods of use for these varied herbal preparations (Ahmad et al., 1988). In addition, Rashid et al (2018) explained that Herbal drink can come from different material such as flowers, leaves, and soft stems of plants, roots, barks, seeds, rhizomes, and woods, and fruits. Fatya et al (2017) noted that *Jamu*, Indonesian traditional herbal medicine, also cannot avoid the impact of New Economy competition. *Jamu* enterprises need to preserve the traditional value in the midst of the modern lifestyle.

Based on this situations, new innovations and some changes needed to be done in order to create herbal drink that can compete with modern lifestyle. Choose the right ingredients is mandatory to create changes and innovations. Due to these purposes, choosing *Rosela* as one of the main Ingredients is the first step to help herbal drinks keeping up with modern lifestyle. According to Farizatul et al (2016), *Rosela* has created high demand on food, beverages, cosmetic and also in herbal industry with high quality product.

Rosela (*Hibiscus sabdariffa* L.) belongs to the family *Malvaceae* and is a popular vegetable in Indonesia, It is water soluble with brilliant and attractive red color and with sour and agreeable acidic taste, which aid digestion. *Rosela* has been used by people for preparing soft drinks and in traditional medicine. It has been observed that its components, such as vitamins (C and E), polyphenols acids and flavonoids, mainly anthocyanins, have functional properties. They contribute benefit to health

as a good source of antioxidants as well as a natural food colorant (Shruthi et al., 2019).

In addition of water-soluble red color and high antioxidant levels, *Secang* as Indonesian herbal medicine needed to get more attentions. *Secang* (*Caesalpinia sappan. L.*) is a plant commonly found in Indonesia. The utilization of this plant is prioritized on the wood. Rina (2013) explained that *Secang* is a plant that has long been widely used as traditional medicine. The presence of brazilin components gives the specific color red in *secang* wood. Srinivasan et al (2012) noted that decoction prepared from the heartwood is commonly used for the treatment of arthritis, blood purifier, antidiabetic and improvement of complexion. Many biological activity of *C. sappan* have been reported anti-complementary activity, anticonvulsant compounds, anti-bacteria, anti-microbia, antioxidant, anti-carcinogenic, hepatoprotective properties, antioxidant and hepatoprotective, flavonoids and phenol.

Continuing the trends of using high antioxidant levels ingredients, red ginger, mace, cinnamon, and cloves has been chosen to enrich the variety of ingredients selections. Back to solving the problems of keeping up this herbal drink to compete with modern lifestyle, market adjustment is done by creating market-oriented product. According to Rajayanake et al (2017), It is most appropriate to have ready to serve drink without any further preparation like boiling / dissolving or adding sugar, salt etc., having energy, healing effect and refreshing effect for Task oriented individuals (TOI) like hikers, soldiers and archaeologists engaged in increased physical activities in extreme environments for longer working times.

Conveniency and compatibility of this herbal drink is very important. Due to that, adapting the easiness of modern and compact konjac jelly is decided. Konjac Jelly is one of the processed foods derived from the Konjac plant (*Amorphophallus konjac*). The root of the Konjac is used because of its content of glucomannan. As explained by Nishinari (2000), a konjac gel has

been a popular food as it has a unique texture, and KGM is a dietary fiber and believed to be good for health.

Creating High antioxidant Konjac Jelly means able to extract antioxidant contents from the ingredients as optimal as possible. To achieve high extraction, water needed to be mix with other substances such as Ethanol and Glycerine or Glycerol. Kowalska et al (2021) explained that Glycerol is used in pharmacy and in food technology, characterised by interesting utility features, and, at concentrations applied in these branches of industry, it is not toxic to humans. As opposed to ethanol, glycerol is not flammable and displays low volatility, but at the same time, like ethanol, it easily mixes with water, which is one of the properties that can be used for the extraction of active substances with health promoting properties. With this property, the use of glycerine as an extraction medium and sweetener is needed in the extraction of polyphenols. Using process that retain antioxidant level is mandatory for the production of this product. Adapting low heat, sealed, and long infusions, sous vide is one of the strongest options. As mentioned by Doniec et al (2022), sous vide was the most effective method of hydrothermal treatment in terms of retention of polyphenolic compounds and high antioxidant activity.

1.2 Objectives of the Study

The Objectives of this study are following below:

1. To commerce and increase the consumption of ingredients that used in herbal konjac jelly.
2. To identify the acceptance of antioxidant rich konjac jelly from *rosela*, *secang*, and Indonesian spices.