

CHAPTER 1

INTRODUCTION

1.1 Background

Ready-to-eat meals have become more prevalent in recent years due to their availability in grocery stores and the emerging habits of fast-paced lives, where people are too busy to prepare their meals. Ready-to-eat meals are deemed more convenient than home-prepared meals, as they are partly or fully cooked before being sold to consumers, allowing them to be eaten within minutes (Alkerwi, Crichton & Hébert, 2014). Curry is a worldwide popular dish that originated from India, and it was introduced to Japan by the British, where Japanese people made modifications to suit their palate. The dish is later known as Japanese curry. Compared to Indian curry, the Japanese curry has a thicker consistency and milder flavor, although it contains abundant spices that are high in antioxidants. Japanese curry is considered a highly nutritious meal due to the presence of meat and vegetables, along with spices (Manggala, 2020). Studies have shown that curry consumption is linked to an increase in pulmonary function and cognitive performance in elderly Asians (Nakayama et al., 2014).

Antioxidants are food additives that help in food preservation by inhibiting oxidative deterioration upon processing and storage. Antioxidants help maintain the sensory properties of foods, including taste, color, freshness, aroma, and overall appeal because of their low volatility and high stability (Wilson et al., 2017). In addition to food preservation, antioxidants also play a role in human health by scavenging free radicals, preventing and repairing damages caused by reactive nitrogen species and reactive oxygen species that generate oxidative stress in high amounts. One of the causes of chronic and degenerative illnesses, including aging, arthritis, cancer, and neurodegenerative diseases, is oxidative stress. Therefore, antioxidants can enhance the immune system and help in lowering the risks of these diseases (Pham-Huy, He & Pham-Huy, 2008).

Rosemary is a natural antioxidant that has been approved for use as a preservative to slow down or inhibit oxidation in foods by the national agency of drug and food control in Indonesia, commonly known as BPOM. Rosemary is a popular spice originating from the Mediterranean regions. The active compounds present in rosemary extract that give it antioxidant properties are carnosic acid and carnosol, which are cyclic diterpene diphenols. Besides being a natural antioxidant, rosemary is commonly used for adding flavor and aroma to foods. The components of antioxidants in rosemary extract are identified as carnosol and carnosic acid (de Raadt et al., 2015). As stated by BPOM, the maximum permitted concentration for rosemary extract in foods is 50 mg/kg. The addition of rosemary extract to ready-to-eat Japanese curry is expected to increase the antioxidant activity and shelf-life of the curry (BPOM, 2019).

1.2 Objective

The objectives of this study are to analyze the physicochemical properties of RTE Japanese curry with and without the addition of rosemary extract as a natural antioxidant, including the antioxidant activity, viscosity, and pH, and to determine whether the panelists are able to distinguish samples that are added with rosemary extract along with their preferences.

1.3 Problem Formulation

The problems that are going to be addressed in this study are as follows:

1. What are the effects of adding rosemary extract to the antioxidant activity of ready-to-eat Japanese curry?
2. What are the effects of adding rosemary extract to the sensory properties of ready-to-eat Japanese curry?
3. What are the effects of adding rosemary extract to the viscosity and pH of ready-to-eat Japanese curry?

4. According to the experiment results, which concentration of rosemary extract is the most suitable for usage in the product?

1.4 Scope of the Study

The independent variables in this study are the concentration of rosemary extract added to the samples upon production and the days of storage. The dependent variables in this study are antioxidant activity, sensory properties, viscosity, and pH of the ready-to-eat Japanese curry samples, which will be observed on days 1, 3, and 7.