CHAPTER 1
INTRODUCTION

1.1 Background of Research

Indonesian meatball (bakso) is a comminuted meat product made by emulsifying ground meat with ice, tapioca starch, salt, and other spices (Sari & Widjanarko, 2015). It is a food that is relatively popular in Indonesia because of its unique flavor and texture (Komariah, Ulupi, & Fatriana, 2004). However, the production of premium Indonesian meatball is very costly due to the high proportion of meat in the formulation. In order to suppress the production cost of Indonesian meatball, tapioca starch proportion in the formulation is usually increased because of its relatively low price compared to other starch. However, some meatball producers add an excess amount of tapioca starch which can produce cheap Indonesian meatball but this will ultimately lower the meatball nutritional quality and changes its sensorial properties (Komariah, Ulupi, & Fatriana, 2004).

Protein content in meat plays a very important role in meat products as it determines the physicochemical and sensorial properties of the product. In terms of sensorial property, protein is very important to produce a tender and juicy product. Several attempts have been made in order to reduce the meat usage in the products which will ultimately lower the protein content and production cost of meat products. One example of these attempts is by adding fillers into the formulation of various meat products. The addition of excessive filler, however, may make the product unacceptable by consumers due to its negative effect on various sensory parameters mainly the flavor and texture of the products. In contrary, an acceptable filler containing meat product can be made with suitable type of filler and proportion (Tokusoglu & Ünal, 2003).

Presently, there is a rise in the use of fiber-based filler due to its technological functionality as filler that has great water binding properties which is excellent to promote final yield of the product. This has an economical benefit towards the food manufacturers as it can reduce the

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production cost of the product. Additionally, it also has very low caloric value and it can be the source of dietary fiber which adds a selling point for a product made with fiber-based filler.

1.2 Problem Formulation

The research problems are formulated as follows:

- What are the physical and sensorial parameters that differentiate regular bakso and bakso made with fiber-based fillers?
- What are the effects of fiber-based fillers added bakso towards their acceptability in comparison to regular bakso?

1.3 Objectives of Research

The objectives of this research are:

- To analyze the physical properties of Indonesian meatball made with the addition of two fiber-based fillers.
- To descriptively and hedonically assess the sensory profile of Indonesian meatball made with the addition of two fiber-based fillers.

1.4 Scope of Research

The scope of this research covered the comparison between texture profile, color profile, descriptive sensorial properties, and hedonic sensorial properties of two types of bakso made with two fiber-based fillers and regular bakso. Specifically, the fiber-based fillers used in this experiment were Vitacel WF 200 and Vitacel MCG 0018, which were obtained from PT Gala Laksana Kreasi. Physical texture profile (hardness, cohesiveness, and springiness) was measured using texture analyzer while the color profile (L, a*, b*, and ΔE) was measured using colorimeter. The descriptive sensorial evaluation was done by measuring the inx`tensity of color, meaty aroma, hardness, cohesiveness, chewiness, springiness, meaty flavor, and juiciness while the hedonic sensorial evaluation was done by scoring the liking towards

appearance, aroma, texture, flavor, and overall liking as a whole product. Statistical analysis was conducted by using one-way ANOVA with IBM SPSS Statistics 20.

1.5 Organization of Thesis

The organization of thesis is as follows. Chapter 1 discussed about what bakso is and the problem with the commonly used attempt to reduce the production cost of bakso. It also introduced the potential application of fiber-based fillers into the formulation of bakso, along with the objectives and the scope of the research. Chapter 2 reviewed the existing literatures about the topic of interest including the function of each ingredients used in the production of bakso and the methodologies to scientifically assess the important parameters in bakso. Chapter 3 consisted of the materials used in the experiment, and elaboration of the methodologies conducted in this research. Chapter 4 and chapter 5 completely analyzed the research findings in relation to the problem stated in chapter 1. Finally, chapter 6 summarized the research by emphasizing the important findings while also providing the recommendations for further research.