Chapter 1

Introduction

1.1 Background

Bakso is a popular traditional Indonesian meatball dish, typically made from beef. Bakso is consumed with broth, noodles, and other condiments. Due to its high protein content, savory flavor, and cultural significance, bakso is widely consumed in Indonesia. However, beef being the primary ingredient in bakso is relatively expensive as it contributes significantly to production cost (Budiono Budiono et al., 2024).

Chicken is commonly used in processed meat products due to its mild flavor, softer muscle structure, and favorable functional properties. While bakso made entirely from chicken is available in the market, there is limited research exploring the combined use of chicken and beef in one formulation to achieve a balance between sensory quality and consumer acceptance (Wahyono & Utami, 2018). Although bakso made entirely from chicken is already common in Indonesia, there is limited research on combining chicken and beef in one formulation to balance cost and maintain desirable quality characteristics. Replacing a portion of beef with chicken may influence key quality attributes, including texture, color, moisture content, and flavor profile, all of which contribute to consumer preference.

One of the challenges of using chicken in meat products like bakso is its lower fat and connective tissue content, which can affect the texture, mouthfeel, and binding ability of the product. In this study, skinless chicken thigh meat will be used instead of chicken breast, as it still contains more fat and connective tissue, which will help enhance texture, moisture, and overall sensory quality (Lee et al., 2022). Additionally, the use of transglutaminase, an enzyme that forms cross links between proteins can further enhance texture, elasticity and water holding capacity in the bakso, despite the reduction in beef content (Erdem et al., 2020).

While bakso made entirely from chicken or beef is widely available, research on chicken and beef bakso formulations with the addition of transglutaminase enzyme remains limited. Existing

studies primarily explore either full chicken substitution or transglutaminase application in single-meat systems. In addition, limited literature discusses the optimal balance between quality and affordability in mixed-meat bakso formulations. This study addresses these gaps by examining the effects of three different chicken-to-beef ratios combined with transglutaminase on bakso quality to identify a formulation that maintains desirable sensory and physicochemical characteristics while reducing reliance on beef.

Given the limited literature on how mixed chicken-beef formulations interact with transglutaminase and how these combinations affect consumer liking, this study investigates the influence of different chicken-to-beef ratios on the physicochemical properties and sensory acceptability of bakso. Understanding these effects is essential for identifying formulations that maintain desirable quality while supporting more flexible use of available protein sources in bakso production.

1.2 Objective

- Evaluating the effect of varying chicken to beef ratios, including the addition of transglutaminase enzyme on the physicochemical and sensory properties of bakso in order to identify a formulation that maintains desirable quality while reducing reliance on beef.

1.3 Hypothesis

1.3.1 Physicochemical Analysis

H_0: Varying the chicken-to-beef ratio does not significantly affect the physicochemical properties (moisture, texture, color, cooking yield) of bakso.

H_1: Varying the chicken-to-beef ratio significantly affects the physicochemical properties of bakso.

1.3.2 Sensory Analysis

H_0: Increasing the proportion of chicken in bakso formulation does not significantly affect the sensory acceptability of the product.

H_1: Increasing the proportion of chicken in bakso formulation significantly affects the sensory acceptability of the product.