

Abstract

Bakso (meatballs) is a popular Indonesian processed meat product traditionally made from beef. However, the rising cost of beef has encouraged the exploration of more cost-effective alternatives. This study aims to develop meatball formulations using a combination of chicken thigh and lean beef in varying ratios (50:50, 60:40, and 70:30, respectively), with the addition of 0.3 percent transglutaminase to improve functional and sensory quality. A 100 percent beef formulation served as the control. All samples were evaluated for physicochemical properties, including moisture content, cooking yield, texture (hardness and springiness), and color, as well as sensory acceptability using a hedonic test. Transglutaminase works by catalyzing covalent cross linking between protein molecules, which resulted in a stronger protein network, better texture, and higher product stability. The results showed that increasing the chicken proportion increased cooking yield, with the 60:40 and 70:30 samples achieving the highest values. Samples containing chicken also displayed lighter and more yellowish color, while the 100 percent beef sample exhibited the darkest and reddest appearance. Texture analysis indicated that mixed-meat formulations produced firmer and more elastic gel structures compared to beef alone. Moisture content remained relatively similar among samples, although the 50:50 formulation recorded slightly lower values. Sensory evaluation revealed that the 60:40 sample (sample 392) obtained the highest overall liking, particularly in texture and taste attributes.

Keywords: Bakso, Chicken and beef combination, Transglutaminase, Physicochemical properties, Texture analysis, Sensory evaluation