

Abstract

Consumption of fish products in Indonesia has increased steadily, increasing demand for fish as raw material while raising the concerns over resource availability. Alternative protein for fish products has gained attention. Mycoprotein, a fungal derived protein source, has emerged as promising alternative protein due to its meat like characteristics and high dietary fiber content. This study investigates incorporation of mycoprotein into tuna fish balls with 5 fish to mycoprotein ratios (100:0, 75:25, 50:50, 25:75, 0:100). Descriptive sensory evaluation (scaling), preference testing (ranking), texture profile analysis (TPA), color measurement, moisture content, cooking yield, and proximate analysis were conducted to evaluate products. Proximate analysis revealed tuna contained higher protein (25.41%) and ash (1.30%) compared to mycoprotein, which exhibits high dietary fiber (13.70%) and carbohydrate (16.14%). Increase in mycoprotein incorporation experienced significant reduction in all texture parameters. Cooking yield showed 15% increase with increase in mycoprotein incorporation ratio, while moisture content decreased from 53.58% to 49.01%. Color analysis revealed a decrease in lightness and yellowness, and increase in redness as mycoprotein increased. Sensory evaluation revealed 75:25 fish to mycoprotein formulation received highest preference ranking among formulations, providing the most balanced physicochemical and consumer acceptance. Pearson's correlation revealed a positive correlation between juiciness and cooking yield, firmness and hardness, and chewiness, while revealed a negative correlation between juiciness and moisture content. Further analysis should explore proximate analysis for the fishball with the addition of mycoprotein instead of the raw materials.

Keywords : *Fish Balls, Mycoprotein, Proximate Analysis, Sensory Evaluation, Texture Analysis*