

Abstract

The increasing demand for meat products has raised concerns regarding environmental sustainability and human health, encouraging the development of alternative protein sources. Mycoprotein, a fungal-derived protein produced through fermentation, has gained attention due to its high protein and dietary fiber content, favorable amino acid profile, and lower environmental impact compared to conventional meat. This study aimed to evaluate the feasibility of using mycoprotein as a partial or complete substitute for chicken meat in nugget formulations. Five formulations with different chicken-to-mycoprotein ratios (100:0, 75:25, 50:50, 25:75, and 0:100) were prepared and analyzed for cooking loss, color, texture profile, and sensory evaluation (descriptive analysis and ranking). Subsequently chicken and mycoprotein was analyzed by proximate analysis (ash, protein, fat, moisture, fiber, calorie, and carbohydrate content) The results showed that mycoprotein contained significantly higher dietary fiber, carbohydrate, fat, and caloric content but lower protein, moisture, and ash content than chicken. The increasing incorporation of mycoprotein in chicken nuggets significantly reduced cooking loss, hardness, cohesiveness, gumminess, chewiness, lightness (L^*), meaty flavor, firmness, chewiness, and fibrousness, while significantly increasing redness (a^*), umami flavor, and fermented flavor intensity. Ranking test results indicated that the 75% chicken and 25% mycoprotein formulation was the most preferred. Overall, the findings demonstrate that mycoprotein can be successfully incorporated into chicken nuggets, with 25% substitution providing the best balance between nutritional enhancement, physicochemical quality, and sensory preference.

Keyword : *Chicken Nugget, Meat Substitute, Mycoprotein, Physicochemical Analysis, Sensory Evaluation.*