

Chemical Composition of Lizardfish Surimi By-Product: Focus on Macro and Micro-Minerals Contents

ABSTRACT

Surimi processing industries generated over 60% of fish by-products, including head, skin, viscera, trimming, bone, scale, and fin. Hence, an effort converting these by-products into valuable compounds and constituents is necessary for optimizing the resources. In order to implement this, the information on the chemical composition of the by-products is helpful. This study aimed to determine the chemical composition, particularly minerals of lizardfish surimi by-products. The protein, fat, ash, moisture, and carbohydrate values of by-products differed significantly ($p < 0.05$). Protein content was highest in the skin and scale (29.63% and 29.62%, respectively), and ash content was predominantly found in the scale (28.43%), fin (26.01%), and bone (23.58). Calcium, magnesium, potassium, and sodium content were significantly varied respectively from 0.25% to 6.88%, 0.06% to 0.37%, 0.01% to 0.09%, and 0.01% to 0.32%. Calcium is highest in scale, whereas zinc, manganese, and iron were most abundance in all parts of the by-products sample. Zinc is mostly detected in the fin (76.75 $\mu\text{g/g}$), bone (48.67 $\mu\text{g/g}$) and scale (46.01 $\mu\text{g/g}$) parts. On the other hand, copper, chromium, selenium, cadmium and lead were detected at lower concentration (less than 2 $\mu\text{g/g}$), and complied with the safety levels set by the Malaysian Food and Regulations. These findings suggest that, by-products generated from lizardfish surimi processing may be used as ingredients to enrich nutritional value of other food products.