

Nutritional composition and mineral analysis of the by-products from tropical marine fish, purple-spotted bigeye (*priacanthus tayenus richardson, 1846*) and barracuda (*sphyraena obtusata cuvier, 1829*)

ABSTRACT

The aim of this study is to evaluate the nutritional composition, macro- and micro-elements from purple-spotted bigeye (*Priacanthus tayenus*) and barracuda (*Sphyraena obtusata*) by product which are extensively used for surimi. The proximate composition showed significant differences ($p < 0.05$) for all parameters. The moisture, protein, fat, ash and carbohydrate contents of purple-spotted bigeye sample ranged from 56.22-79.26%, 12.46-31.14%, 0.24-1.29%, 1.27-22.86% and 0.42-0.98%, respectively. Meanwhile, barracuda recorded 55.76-79.86% moisture, 18.46-27.29% protein, fat 0.05-2.55% fat, 1.22-24.36% ash and 0.41-0.88% carbohydrate contents. For macro-elements analysis, both fish species contained high concentration of calcium, especially in fins, bone and skin. For other macro-elements, all samples recorded lower than 4.5 mg/g. Although the concentration of micro-element zinc and copper were dominant in all samples examined, their levels were still below the permissible limits recommended by the Food and Agriculture Organization/World Health Organization (FAO/WHO) and the Malaysian Food Regulations (MFR). More importantly, chromium, cadmium and lead were far below the toxic levels regulated by the FAO/WHO and the MFR. Thus, the by-products used may be applied for potential food ingredients and for baseline information in the further experimentation.