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Comparative Nutritional Analysis of Six Selective Small Pelagic Fish Species in Sri Lanka

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Abstract

Fish constitutes a crucial dietary staple in Sri Lanka, largely due to the economic significance of fishing in local communities. However, a disparity exists between the recognition of small pelagic fish and larger common pelagic species. They are often identified as less economically important in fish marketing, and very much popular among the economically disadvantaged local community, compared to large pelagic fish. Small pelagic fish are undervalued because of their higher bone-to-flesh ratio. This study seeks to highlight the nutritional importance of these underappreciated six small pelagic fish species, particularly among low to middle-income communities as a cheap protein source. The species were chosen for their cost-effectiveness and abundance during off-seasons and collected from the Negombo and Chillaw fish market. The samples were confirmed with The Marine Fish Source of Sri Lanka; identified as Salaya (Goldstripe Sardinella/ *Sardinella gibbosa*), Sura-paraw (Yellowstripe scad/ *Selaroides leptolepis*), Mas-Panna (Toothpony/ *Gazza minuta*), Katilla (Bald glassy/ *Ambassis gymnocephalus*), Katumassa (Kelee shad/ *Hilsa kelee*), and Oleya (Saddleback silverbiddy/ *Gerres lucidus*). The Total Length (TL), Fork Length (FL), and Standard Length (SL), were measured in cm (n=30), and samples were further subjected to proximate analysis such as moisture, crude-protein, crude-fat, and ash contents at dry-basis (n=3) by following AOAC standards and results were statistically analyzed using Minitab-19. Among the six selected fish species, Katumassa was recorded the highest TL (14.75±1.06), FL (12.57±0.84) and SL (11.62±0.87), while Katilla was recorded the least values as TL (7.14±0.37), FL (5.96±0.37) and SL (5.38±0.25). The significant differences were observed in moisture, crude-protein, crude-fat, and ash percentages for the fish species of Katilla and Oleya; Katumassa and Salaya; Oleya and Katilla; and Mas-panna and Oleya ($p<0.05$, 95% confidence level) respectively. Minimal attention in nutritional studies and the impact of cooking and consumption on the nutritional profiles of the aforementioned species has not been extensively studied from both local and global studies, hold potential for the development of functional processed food sources. It is imperative to encourage the community to comprehend the significance of small pelagic fish in fostering sustainable dietary practices and emphasize the importance of further research, particularly technology-driven investigations, aimed at harnessing the untapped potential of these underutilized resources in the food industry.

Keywords: Small pelagic fish, Marine fish source, Proximate composition, Underutilized fish species

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