Evaluation of microbiological and chemical characteristics of selected dried fish species available at Sri Lankan market

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Dried fish, a rich source of protein produced using fish, are consumed extensively in Sri Lanka. The demand for dried fish in the country is fulfilled from local production as well as through imports. The use of low quality raw materials, unhygienic processing and improper handling practices cause the deterioration of the quality of dried fish by making them unacceptable for consumption. Therefore the study was carried out to evaluate the microbiological and chemical quality of selected dried fish available in local market. Random dried fish samples of katta, shark, hurulla and prawn were collected from local producers. Samples of imported dried fish were collected from Sri Lanka customs and retail outlets. Samples were analyzed for total bacterial count, yeast and mould count, halophilic count, total coliform, *Escherichia coli*, *Staphylococcus aureus*, chemical quality was assessed by analyzing histamine content and salt content and water activity. All the tested dried fish samples were negative for coliform, *Escherichia coli*, *Staphylococcus aureus* and halophilic bacteria. Irrespective of the species, local dried fish showed a high degree of bacterial contamination compared to the standard limit of $5x10^5$ cfu/g. Yeast and mould count for all samples complied with the standard levels. Mean histamine levels in local and imported hurulla samples were 92.90 mg/kg and 25.46 mg/kg respectively. Salt content of all samples were above the standard level of 12% except for imported prawn samples. Water activity of local prawns exceeded the specified level of 0.75 while all other local and imported samples exhibited values within the standard limit. A significant difference was observed in total bacterial count of imported and local prawns and yeast and mould count of imported and local hurulla. From the samples obtained from Sri Lanka Customs, prawn samples exhibited significantly lower total bacterial count and lower fungal count compared to the samples collected from retail outlets. When considering the water activity there was a significant difference in imported and local prawn and shark samples. The results revealed that the locally produced samples available to purchase in local market were comparatively low quality with respect to imported samples when considering the microbiological and chemical quality according to local standards.

Keywords: Chemical quality, dried fish, imported, microbiological quality, water activity