

IMPACT OF THE FROZEN STORAGE AND COOKING METHODS ON NUTRITIONAL COMPOSITION OF SOME FISH TYPES

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Fish is more nutritious than staple foods, providing high quality proteins, essential fatty acids and micronutrients. Fish is rarely eaten raw and usually cooked in a variety of ways for their resulting taste and texture. However, the effect of different cooking methods invariably affects the nutritional value of fish. Hence this study is aimed to explore the effects of frozen storage for four weeks (-18°C) and different cooking methods were applied (boiling, pan frying, deep frying, micro waving) on the proximate composition of commonly consumed fish types in Sri Lanka (Flying fish – *Exocoetus volitans*, Tuna – *Thunnus albacares*, and Shark – *Carchanius sp*). Frozen fish samples were taken out at weekly intervals, different cooking methods were applied and analysed for proximate composition for 4 weeks. Raw fish samples were used as control. Mean moisture, proteins, fat and ash contents of raw flying fish were- 69.3%, 28.1%, 1.1%, 2.2%, tuna- 72.1%, 22.3%, 3.4%, 1.8% and shark- 75.1%, 18.7%, 6.0% and 1.8%, respectively. Moisture content significantly increased, protein decreased, and fat and ash contents remain unchanged in frozen storage of all 3 types of fish. Comparing the cooking methods highest moisture content and lowest ash, protein and fat contents were found in boiled fish. Lowest moisture and highest ash, protein and fat contents recorded in deep fried fish. The Same pattern followed throughout the storage period. No significant difference was found in moisture, protein, fat and ash contents in raw and boiled samples. Fat content was significantly lower in microwave samples than deep fried samples. Second highest protein contents were found in microwave tuna and shark fish. Protein content in microwave cooked and boiled flying fish were similar. Hence it is advisable to avoid excessive frying. Microwaving was found to be the best cooking method for healthy eating.

Keywords: Cooking methods, Fish, Frozen storage, Proximate composition