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Fatty acid composition of some fresh water fish species (fresh and salt dried) in Sri Lanka

Fish provides high amount of protein and essential polyunsaturated fatty acids (PUFA) that are important for human nutrition & health. Information available on the fatty acid composition of Sri Lanka fresh water fish is scanty when compared with marine fish. Therefore, the fatty acid profiles of some commonly available fresh water fish species, in both raw & salted-dried forms, were determined. Also, the effect of salting and drying on the fatty acid profiles of fish species were evaluated. The selected fresh water fish species were *Oreochromis mossambicus* ("Tilapia"), *Ophicephalus striatus* ("Lulla"), *Anabas testudineus* ("Kavaiya") and *Heteropneustes fossilis* ("Hunga").

Fatty acid composition of the four species was determined by Gas Chromatographic technique as fatty acid methyl esters.

The results revealed that the total fat content of the fresh form of fish was lower than that of marine fish. The studied four species of fresh-water fish (fresh form) contained moderate level of saturated fatty acids (24-40% of total fat) compared with marine fish (13-46% of total fat). Palmitic acid (16.4-23.8% of total fat) was the predominant saturated fatty acid found in the studied species. Monounsaturated fatty acid level (26.8-40.9% of total fat) of the studied species was within the range of marine fish (20-53% of total fat). Total polyunsaturated fatty acids (PUFA) level of studied fresh-water fish (fresh form) was 19.7-33.5% of total fat and it was generally lower than that of marine fish (19- 49% of total fat). However, the fresh-water fish contained 15.8- 30.1% of n-3 PUFA, predominantly Docosahexaenoic acid (DHA) & Eicosapentaenoic acid (EPA) which are of physiological importance. Processing (Salting & drying) altered the types and ratios of fatty acid composition in the four species studied.

The study suggests that fresh-water fish (both raw and salted-dried forms) namely Tilapia, Lulla, Kavaiya and Hunga can be used as nutritious substitutes for marine fish.