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# Fatty Acid Composition of Muscle, Liver, and Adipose Tissue of Freshwater Fish from Lake Victoria, Uganda

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## Abstract

Fish oils may differ in fatty acid (FA) composition depending on diet. Oils extracted from muscle, liver, and adipose tissue of Nile perch (*Lates niloticus*), Nile tilapia (*Oreochromis niloticus*), silver fish (*Rastrineobola argentea*), lungfish (*Protopterus aethiopicus*), Victoria squeaker (*Synodontis victoriae*), and two catfishes (*Clarias gariepinus* and *Bagrus docmac*) from Lake Victoria, a tropical freshwater lake, were evaluated for FA composition. Oil contents of muscles, livers, and adipose tissues were in the range of 3.16 to 13.8%, 3.62 to 53.4%, and 28.8 to 42.4%, respectively. Omega-3 polyunsaturated FA, particularly alpha-linolenic (ALA), eicosapentaenoic (EPA), docosapentaenoic (DPA), and docosahexaenoic (DHA) acids, were found to be in substantial amounts in oils from all seven fish species. Ratios of polyunsaturated FA to saturated FA (0.79 to 1.18) were in the range considered adequate for normal health. Overall, the results show that the fish species studied are a rich source of omega-3 polyunsaturated FA.

Keywords: Freshwater fish, fatty acid composition, omega-3 PUFA, Lake Victoria

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