Proximate and fatty acid composition of liver and fatty tissue of patin catfish (Pangasianodon hypophthalmus)

Abstract

The visceral storage fat and liver of patin catfish (Pangasianodon hypophthalmus) are normally discarded, which incurs cost and can cause environmental pollution. However, these may be potential sources to extract fish oil. The proximate and fatty acid compositions of liver and fatty tissue of patin catfish were investigated to evaluate the suitability of these by-products for extracting fish oil. Fat was extracted using a low temperature solvent extraction method. The average fat content of fatty tissue and liver of females were 77.64 and 11.71%, respectively, whereas in males this was73.23 and 9.59%, respectively. Fatty acids found in the extracted oil of these byproducts were C12:0, C14:0, C14:1, C16:0, C16:1, C18:0, C18:1, C18:2, C18:3, C18:4, C20:0, C20:1, C20:4, C20:5, and C22:6.The major fatty acids presented in these tissues were palmitic (C16:0), oleic (C18:1n-9), and linoleic acid (C18:2 n-6). The total amount of polyunsaturated fatty acids of liver from male and female patin catfish were 13.31 and 13.30%, respectively, whereas in the fatty tissue these were11.64 and 12.09%, respectively. The n-3 to n-6 ratios of liver and fatty tissue of females were 1.61and 0.95, respectively, whereas in male fish these were 1.31 and 1.05, respectively. Results of this study indicated that the liver and fatty tissues of patin catfish are suitable sources of fish oil specifically due to the presence of monounsaturated and n-3 polyunsaturated fatty acids.

Keyword: Catfish; Fatty acid; Liver, Fatty tissue