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TOTAL LIPIDS AND FATTY ACIDS COMPOSITION OF WILD AND CULTURED TILAPIA

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ABSTRACT

Total lipid and fatty acid composition of edible portions of wild tilapia were compared with those of cultured tilapia. Fatty acid composition were determined by gas-liquid chromatography. The mean total lipid of the edible portion from wild tilapia was significantly lower ($P < 0.05$) compared with that found in cultured tilapia (1.18 ± 0.20 vs 2.62 ± 0.20). Palmitic acid (C16:0) was the predominant saturated fatty acid in both cultured and wild tilapia. Oleic acid (C18:1, n-9) was the most abundant monounsaturated fatty acid, and its level was significantly higher ($P < 0.05$) in cultured tilapia. The principal acid in the polyunsaturated group was linoleic acid (C18:2, n-6). Cultured tilapia contained significant levels of C18:2, n-6 compared to wild tilapia. The high level of C18:2, n-6 in cultured tilapia may be due to the inclusion in the diet of cultured fish of soybean oil-rich in C18:2, n-6. No significant differences were found between cultured and wild tilapia for their content of eicosapentaenoic acid (C20:5, n-3, EPA) and docosahexaenoic acid (C22:6, n-6, DHA). It was found that the lipids of cultured tilapia had higher levels of n-6 fatty acid and lower levels of n-3 fatty acid which resulted in lower n-3 to n-6 ratio as compared to wild tilapia.

Indexing key words: Tilapia, wild, cultured, fatty acids.