

Title Influence of diets enriched with flaxseed oil on the  $\alpha$ -linolenic, eicosapentaenoic and docosahexaenoic fatty acid in Nile tilapia (*Oreochromis niloticus*)

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#### **Abstract**

This study examined the effects of different levels of flaxseed oil in increasing the  $\alpha$ -linolenic (LNA), eicosapentaenoic (EPA) and docosahexaenoic (DHA) fatty acids contents in tilapias raised in captivity. Nile tilapia were raised in captivity for a period of five months, receiving increasing levels (0%; 1.25%; 2.50%; 3.75% and 5.00%) of flaxseed oil in substitution for sunflower oil (control). No significant differences ( $P>0.05$ ) of moisture or total lipids contents were found among fillets from tilapia fed the different diets. Analyses of the fatty acid methyl esters (FAMES) were quantitatively measured by capillary gas chromatography against a C<sub>23:0</sub> internal standard. Increases of the concentration of LNA, EPA and DHA (in mg/g of total lipids), were well established in the fillets, with a significant difference ( $P<0.05$ ) among all the treatments, as the replacement of the sunflower oil by flaxseed oil was increased.