Protein/energy ratio and HUFA content in the diet of *Pangasianodon hypophthalmus* (Sauvage, 1878) fingerlings: Effect on growth and flesh quality

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**Abstract**

A 60 day feeding trial was conducted to study the effect of varying levels of protein/energy (P/E) ratio and highly unsaturated fatty acid (HUFA) supplemented diet on growth and flesh quality parameters of *Pangasianodon hypophthalmus* fingerlings. One hundred and eighty fingerlings of uniform weight (4.32±0.08g) were randomly distributed into five treatment groups with three replications. The five different treatment groups were: Control - T0H0 (basal feed +117 mg/kcal, P/E ratio); T1H0 (basal feed +100 mg/kcal, P/E ratio); T2H0 (basal feed +133 mg/kcal, P/E ratio); T3H1 (basal feed +100 mg/kcal, P/E ratio+1% HUFA) and T4H1 (basal feed + 133 mg/kcal, P/E ratio+1% HUFA). Significantly higher (P<0.05) weight gain (WG) %, specific growth rate (SGR), and feed conversion efficiency (FCE) were observed in the T4H1 and T2H0 groups. Feed conversion ratio (FCR) and protein efficiency ratio (PER) were lowest in the T4H1 group. T3H1 and T4H1 groups manifested significantly higher (P<0.05) value for flesh quality indices such as springiness, adhesiveness, gumminess, and chewiness. Lowest hardness value was found in T4H1 group. Significantly higher (P<0.05) EPA and DHA deposition in fish muscle was observed in T4H1 group. Protease activity was higher in T4H1 group followed by T2H0 group and lowest in T1H0 group. Amylase activity was lower in T2H0 and T4H1 groups. Overall results revealed that P/E ratio of 133 mg/kcal with additional supplementation of 1% HUFA in the diet enhances growth and improves flesh quality of *P. hypophthalmus* fingerlings.

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