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Effects of extruded diets with different energy levels on fat Body composition and profile of fatty acids of Rainbow trout (*Oncorhynchus mykiss*) fed extruded diets with different energy levels

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ABSTRACT:

We have evaluated the influence of energy level on the ratio of digestible protein and digestible energy on the body composition and fatty acid profile composition of fillet in rainbow trout. Two extruted diets with different energy levels were used. The comparison of the two foods with different formulations is perfomed in isoenergetic conditions. Following this study, two diets were formulated: the extruded diet A with 41,4% crude protein, 27,4% lipids and 20,4% carbohydrate while the extruded food B with 39.7% CP, 24,4 % fat and 15,7 carbohydrates with digestible energy of 21.32 Mj kg^{-1} and 19.32 Mj kg^{-1} respectively. The initial average weight of the trouts was 100 g from the same batch of eggs which were divided randomly into six fiberglass conical tanks at open circuit.

The diet was assigned to six tanks of 50 fish each with three replicates for each diet and the experiment was conducted for 127 days. The ratio DP/DE of body composition influenced by diet and profile of fatty acid and their distribution in the fillet of fish was calculated. The test focused on the ventral fillet of fish. Our results demonstrated that the total fatty acids expressed in g/100g wet matter (WM) reveal significant variations ($p<0.05$). The fatty acid composition of the fish muscle varied with the high level fat for the low ratio DP/DE, and the best ratio n3/n6 ($p<0.05$) is found out. The lipid content increased with increasing dietary lipid levels and depended on the protein content in feeds and the ratio DP / DE. Fatty acid (FA) composition of the muscle reflected the fat levels in the diet.

Keywords:

Fat, fatty acid, protein digestible, energy digestible, fillet, n-3/n-6 Ratio, rainbow trout.