

Effects of dietary energy levels on growth performance, feed utilization and body composition of Rainbow trout

Authors:

ABA Mustapha¹, Belghyti Driss¹, Elkharrim Khadija¹, Benabid Mohammed², Said Aboulfaraj³.

Institution:

1. Biology and Health Laboratory, Environmental and Parasitology Team/UFR Doctoral "Parasitology compared: Medical and Veterinary Applications," Sciences Faculty, Ibn Tofail University, Kénitra B.P. 133, 14000, Morocco.

2. National Center of Hydrobiology and Pisciculture (NCHP) Azrou Morocco.

3. Les Domaines Agricoles, Domaine Ain Aghbal Azrou Morocco.

Corresponding author:
ABA Mustapha.

ABSTRACT:

In order to compare the growth performance of trout with two extruded foods and their impact on body composition, an experimental test was conducted from June 1 to October 5, 2010 at National Center of Hydrobiology and Fish Culture. The comparison of the two foods with different formulation and different energy is performed in isoenergetic conditions. Following this study, two diets were formulated : the extruded diet A with 41% crude protein, 27% fat and 20% carbohydrates and the extruded food B with 39.7% CP, 24% fat and 15,7 carbohydrates, with digestible energy respectively of 21.32 Mj and 19.32 Mj. The initial average weight of the trouts was 100 g from the same batch of eggs. They were divided randomly into six fiberglass conical tanks at open circuit . The diet was assigned to six tanks for 50 fish each with three replicates for each diet and the experiment was conducted for 127 days.

The ratio DP/DE of diet influenced feed conversion ratio and specific growth rate ($p < 0.05$) . The best FCR was obtained with the extruded food A with 1.18 v.s 1.26. The higher IV was obtained with the low DP/DE ($p < 0.05$). Final whole-body lipid content was positively related to dietary lipid levels and to digestible energy. Better retention of protein was obtained by the diet A.

This study is consistent with current trends in the nutrition of fish and salmonids especially designed to reduce the ratio of DP/DE in order to have better performances of growth and a better quality of the fish.

Keywords:

growth, feed efficiency, energy ,body composition, rainbow trout.