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Research Paper

Effect of sex length and weight on carcass quality changes in *Onchorhynchus mykiss*

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Abstract

Introduction: The chemical composition of fish meat includes water, protein, fat, carbohydrates, vitamins and minerals.The contents of chemical composition (protein, fat, moisture and ash) in the body of aquatic animal depends on the type of nutrition, living environment, age and sex of the living organism.

Methods: The aim of this study was to investigate the carcass composition percent (protein, fat, moisture and ash) in rainbow trout with different weight (50 ± 10 g, 250 ± 10 g and 600 ± 10 g), length (12 ± 5 cm, 22 ± 5 and 38 ± 5 cm) and genders.

Results and discussion: The results of comparing the weight and length groups showed that the percent of protein, fat, moisture and ash of fish carcasses were significantly different between the groups ($P < 0.05$), the fish with the highest length and weight, showed the highest protein and fat contents ($P < 0.05$), the inverse relationship between the ash and moisture contents were observed, there were no significant difference between the 50 and 250 g groups ($P > 0.05$). The results of different genders showed that the content percent of protein, fat, ash and carcass moisture of fish were significantly different between the groups ($P < 0.05$), so in male fish it was significantly higher than females. The results of the present study showed that in rainbow trout, the effect of length, weight and gender on carcass composition has a significant meaning, and fish with 600 g with an average length of 38 cm had better quality. Also, the contents of protein, fat, ash and moisture in males is significantly higher than females in rainbow trout.