

The effects of prebiotic Xylo oligosaccharides on composition carcass, hematological indices and intestinal microbiota of Rainbow trout (*Oncorhynchus mykiss*)

Abstract

The purpose of this study was to investigate the effects of prebiotic Xylo oligosaccharides on composition carcass, hematological indices and intestinal microbiota of Rainbow trout (*Oncorhynchus mykiss*). The fishes weighted in average 77 ± 3 g distributed in 12 fiberglass tanks (300 Liters) with a density of 20 pieces per tank. Diet for 63 days with diets containing zero, 0.5, 1 and 2 percent were fed prebiotic Xylo oligosaccharides. At the end of the composition, carcass (crude protein, fat, ash and moisture), hematological (red and white blood cell count, white blood cell count, hemoglobin and hematocrit) and microbiota a colon (total bacteria count and the number of *Lactobacillus*) were measured. The results showed that the moisture content of protein and muscle tissue of fishes from different treatments did not have meaningful difference ($p > 0.05$). Significant decrease with increasing the amount of fat and muscle tissue treated with 2% prebiotic Xylo oligosaccharides ash were seen ($p < 0.05$). Heterophile Xylo oligosaccharides had no effect but on blood indexes. However, significant increases in the number of white blood cells, lymphocytes, eosinophils, and hematocrit were observed in the control treatment compared to the other treatments ($p < 0.05$). Evaluation of the total density of bacteria and *Lactobacillus* confirms significant increase of 2% prebiotic treatment compared to the other treatments ($p < 0.05$).

Keywords: Prebiotic, Xylo oligosaccharides, Intestinal microbiota, Rainbow trout.