

Abstract

The aim of this research was to investigate the effect of diet containing different levels of Prebiotic Celmanax on blood and immunity parameters and quality of *Oncorhynchus mykiss* fillet during storage in refrigerator (4°C). After feeding trial with Prebiotic Celmanax for 60 days, the blood samples of the fish were taken in order to evaluate blood indexes and the fish safety using the caudal vein method and they were measured for blood and biochemical parameters. Then, the fish were filleted and they were maintained in the refrigerator after packing and they were measured for chemical (TVB-N, PV, TBA and FFA) and microbial (TVC and PTC) parameters. Sensory evaluation was conducted in 0, 3, 6, 9 and 12 days. An increase in different levels of Prebiotic Celmanax leads to an increase in Hemoglobin (Hb), Red Blood Cell (RBC), white Blood Cell (WBC), Neutrophil (Neu), Albumin (Alb), Immunoglobulin (IgM) and Lysozyme (Lyso). According to the results, there was no significant difference among treatments in the case of free fatty acids of the fillet (FFA) ($P > 0.05$). The amount of peroxide and thiobarbituric acid in treatments including Celmanax was less than the witness. An increase in the amount of end free bases (TVB-N) in treatments including Celmanax was less than the witness. Total bacterial load (TVC) and cold liked (PTC) of the witness fillet was more than Celmanax treatments during maintenance ($P < 0.05$). As the least amount was observed in the 6% treatment. The study results represented that the increase in level of Prebiotic Celmanax in food ration led to growth improvement, safety response and increases of rainbow trout fillet permanency during preserve in the refrigerator.

Keywords: Prebiotic, rainbow trout fillets, food ration, safety stimulation, bacterial load



University of Zabol
Graduate school
Faculty of Natural resources
Department of fisheries

**The Thesis Submitted for the Degree of M.Sc
Of Fish products processing**

Title:

**Effect of dietary containing Celmanax Prebiotic
on rainbow trout fillet quality during
refrigerated storage**

Supervisors:

Dr. E. Alizadeh Doughikollaee

Dr. H. Jafaryan

Advisor:

Dr. E. Ahmadi Far

By:

Elmira Naimi Nezamabad

September 2017