

## Abstract

The object of this thesis was determination effects of three different packing method modified atmosphere, vacuum and Normal packaging on the Shelf life of trout fillets. For this object rainbow trout fillets in terms of modified atmosphere packaging was Packaged with three different atmospheres (A, 10/40/50 %O<sub>2</sub>/CO<sub>2</sub>/N<sub>2</sub>; B,10/60/30%O<sub>2</sub>/CO<sub>2</sub>/N<sub>2</sub> ; C,10/80/10 % O<sub>2</sub>/CO<sub>2</sub>/N<sub>2</sub>), Vacuum (D) and Normal packaging conditions (E) were stored at 4 °C and monitored over 18 days. Quality of rainbow trout fillets on days 0, 3, 6, 9, 12, 15 and 18. were assessed by microbial (total viable counts, psychrotrophic counts), physical (drip loss, pH, colour CIE Lab) and chemical parameters (total volatile basic nitrogen (TVBN), thiobarbituric acid (TBA). The results showed that all chemical and biological parameters increased during storage. With the increasing amount of CO<sub>2</sub> in the treatment parameters TBA, TVB-N, pH, TVC, in treatments C and B than the other treatments (P <0/05). Color index results in MAP packaging compared to other treatments showed a higher level. Promote collapse package the negative aspects of treatment C, which can lead to rejection of the product by the consumer. Increase of undesirable chemical, physical and bacterial control samples and samples from the early days of vacuum between the ninth and twelfth days of storage done, while MAP packages particularly treatments B and C stayed intact until the eighteenth day storage. Given the limits of biological results showed that the gas mixture B and C, of trout fillets, about 6 days shelf life at room temperature under vacuum packaging C° 4 to the increase occurs.



University of Zabol  
Graduate School  
Faculty of Natural Resources  
Department of Fisheries

**The Thesis Submitted for the Degree of M.Sc in Fish product  
processing**

**Shelf life assessment of modified  
atmosphere packaged rainbow trout  
(*Oncorhynchus mykiss*) fillets during  
Storage in Refrigerator**

**Supervisors:**

Dr. Ebrahim Alizadeh Doughikollaee

**Advisors:**

Dr. Seyed Vali Hosseini

**By:**

M. A. Khanlar

september 2014