

Effects of Packaging Method, Storage Temperature and Storage Time on the Quality Properties of Cold-Dried Beef Slices

Authors : Elif Aykın Dinçer, Mustafa Erbaş

Abstract : The effects of packaging method (modified atmosphere packaging (MAP) and aerobic packaging (AP)), storage temperature (4 and 25°C) and storage time (0, 15, 30, 45, 60, 75 and 90 days) on the chemical, microbiological and sensory properties of cold-dried beef slices were investigated. Beef slices were dried at 10°C and 3 m/s after pasteurization with hot steam and then packaged in order to determine the effect of different storage conditions. As the storage temperature and time increased, it was determined that the amount of CO₂ decreased in the MAP packed samples and that the amount of O₂ decreased while the amount of CO₂ increased in the AP packed samples. The water activity value of stored beef slices decreased from 0.91 to 0.88 during 90 days of storage. The pH, TBARS and NPN-M values of stored beef slices were higher in the AP packed samples and pH value increased from 5.68 to 5.93, TBARS increased from 25.25 to 60.11 µmol MDA/kg and NPN-M value increased from 4.37 to 6.66 g/100g during the 90 days of storage. It was determined that the microbiological quality of MAP packed samples was higher and the mean counts of TAMB, TPB, Micrococcus/Staphylococcus, LAB and yeast-mold were 4.10, 3.28, 3.46, 2.99 and 3.14 log cfu/g, respectively. As a result of sensory evaluation, it was found that the quality of samples packed MAP and stored at low temperature was higher and the shelf life of samples was 90 days at 4°C and 75 days at 25°C for MAP treatment, and 60 days at 4°C and 45 days at 25°C for AP treatment.

Keywords : cold drying, dried meat, packaging, storage

Conference Title : ICFTQC 2019 : International Conference on Food Technology and Quality Control

Conference Location : Paris, France

Conference Dates : March 28-29, 2019