World Academy of Science, Engineering and Technology
International Journal of Nutrition and Food Engineering
Vol:9, No:03, 2015

The Effects of Nanoemulsions Based on Commercial Oils: Sunflower, Canola, Corn, Olive, Soybean, and Hazelnut Oils for the Quality of Farmed Sea Bass at 2±2°C

Authors : Yesim Ozogul, Mustafa Durmuş, Fatih Ozogul, Esmeray Kuley Boğa, Yılmaz Uçar, Hatice Yazgan

Abstract : The effects of oil-in-water nanoemulsions on the sensory, chemical (total volatile basic nitrogen (TVB-N), thiobarbituric acid (TBA), peroxide value (PV) and free fatty acids (FFA), and microbiological qualities (total viable count (TVC), total psychrophilic bacteria, and total Enterbactericaea bacteria) of sea bream fillets stored at 2 ± 2°C were investigated. Physical properties of emulsions (viscosity, the particle size of droplet, thermodynamic stability, refractive index and surface tension) were determined. The results showed that the use of nanoemulsion extended the shelf life of fish 2 days when compared with the control. Treatment with nanoemulsions significantly ($p<0.05$) decreased the values of biochemical parameters during storage period. Bacterial growth was inhibited by the use of nanoemulsions. Based on the results, it can be concluded that nanoemulsions based on commercial oils extended the shelf life and improved the quality of sea bass fillets during storage period.

Keywords : lipid oxidation, nanoemulsion, sea bass, quality parameters
Conference Title : ICFEB 2015 : International Conference on Food Engineering and Biotechnology
Conference Location : Prague, Czechia
Conference Dates : March 23-24, 2015