

The Effects of *Zataria multiflora* Boiss and Coating on Quality of Refrigerated Silver Carp Fillet

Abstract

The aims of present study was to investigate the effects of *Zataria multiflora* Boiss essential oil and coating on silver carp fillet quality during storage at 4°C. Treatments included the following: A (control samples, without coating and EO), E₁ (treated samples with 0.2 % EO), E₂ (treated samples with 0.4 % EO), C (coated samples), E₁C (treated by coating and 0.2 % EO) and E₂C (treated by coating and 0.4 % EO). Chemical, microbiological and sensory factors were determined at days 0, 3, 6, 9, 12, 15 and 18 of storage. During storage at 4 °C, the pH of all treated and untreated samples increased significantly ($P<0.05$). The pH increment was lower in coated and coated with essential oil treatments (E₁C and E₂C) at day 15. The results of TVB-N analysis showed lower increase in combination treatments (E₁C and E₂C) than others. PV values increased significantly ($P<0.05$) with time of storage at 4°C for all treatments. TBA values of control and treated samples were much lower than upper acceptability limits at the end of storage. Microbiological studies showed longer shelf life for treated sample as compared to control one's and highest shelf life was observed in E₁C and E₂C samples. The results showed that samples treated with *Z. multiflora* essential oil had the lowest sensory acceptability at the beginning of study, but the sensory aspects increased gradually during storage and decreased again at the end of storage. The results of this study showed that combination of coating and *Zataria multiflora* Boiss essential oil (E₁C and E₂C) increased the shelf life of silver carp fillets more than other treatments. The shelf life of these samples was 15 days.

Keywords: Silver carp, *Zataria multiflora* Boiss essential oil, Edible coating, shelf life, quality.



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