



Effects of rosemary extract, *Rosmarinus officinalis* to extent the shelf-life of black sea kilka, *Clupeonella cultriventris caspia* ball during short storage in refrigerated temperature

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Abstract

The objective of this study was to investigate the effect of rosemary extract at concentration of 1% and 5% on the shelf-life of kilka ball during storage in refrigerator temperature for 15 days. The quality of kilka ball during storage time was evaluated by microbiological, physicochemical and sensory analysis. Microbial growth during storage in refrigerator temperature for control samples was higher than treated samples. Peroxide, total volatile base nitrogen, thiobarbituric acid and free fatty acid values gave acceptable results up to 9 days for the control and 15 days for treated groups. According to the sensory evaluation results, shelf life of control and treated kilka ball samples stored in refrigerator temperature was extended in 1% rosemary extract. The results obtained from this study showed that the shelf life of stored kilka ball in refrigerator temperature has extended by 3–4 days compare to the control samples.

Keywords: Common kilka; Fish ball life; Refrigerator temperature; Rosemary extract; Quality indexes