

## **Effect of water and ice mixture containing Sumac essential oil pretreatments on the quality of gutted and whole *Cyprinus carpio* during storage in refrigerator**

### **Abstract**

The aims of present study were to investigate the effects of water and ice mixture containing Sumac essential oil pretreatments on the quality of gutted and whole *Cyprinus carpio* during storage in refrigerator. Treatments included the following: A (control samples whole fishes without Sumac essential oil), E<sub>1</sub> (whole fishes whit treated samples with 0.2 ml per 100 g EO), E<sub>2</sub> (gutted fishes whit treated samples with 0.2 ml per 100 g EO). Chemical, microbiological and sensory factors were determined at days 0, 3, 6 and 9 of storage. During storage at 4°C, the PH of all treated and untreated sampeles increased significantly ( $p < 0.05$ ). the pH increment in E<sub>2</sub> was lower than other treatment at the end of storage period. the result of TVB-N analysis showed lower increase in E<sub>2</sub> 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 ere much lower than upper acceptability limits at the end of storage. Microbiological studies showed longers shelf life for treated samples as compared to control Ones and highest shelf life was observed in E<sub>2</sub>. The result showed that samples treated with Sumac essential oil had the lowset sensory acceptability at the end of storage.

**Keywords:** *Cyprinus carpio*, Enterocacteriaceae, Sumac, refrigerator.



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