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USING ROSEMARY AND SAGE FOR EXTENDING THE SHELF-LIFE OF COMMON CARP FISH FINGERS DURING COLD STORAGE

BY

Abd El-Razik, M. M.*; Elhariry, H. M.* and Abou-Taleb, M.**

* Department of Food Science, Fac. of Agri`c., Ain Shams Univ., Cairo, Egypt.

** Laboratory of Fish Processing and Technology, National Institute of Oceanography and Fisheries, Cairo, Egypt

ABSTRACT

Rosemary (*Rosemarinus officianalis* L.) or sage (*Salvia officinalis* L.) was incorporated at level of 1.5 or 3% in common carp (*Cyprinus carpio*) fish fingers. Quality and shelf life of the control and treated carp fingers during storage at 4 ±1 C were investigated periodically using organolyptic (appearance color, odor, taste, tenderness, juiciness, and overall acceptability), chemical (TVB-N, TMA, TBA, AV, and PV) and microbiological (mesophilic, psychrophilic, and *Enterobacteriacea* counts) analysis. All studied chemical parameters were significantly ($P<0.01$) correlated with storage time. Although, total volatile basic nitrogen (TVB-N) values were higher than 40 mg/100 g, the carp fish fingers were accepted based on the organolyptic evaluation. Trimethylamine-nitrogen (TMA-N) exhibits a great difference between treatments and seems to be a better index of spoilage for fish products processed from the freshwater such as common carp fish. The bacterial growth was significantly inhibited due to using rosemary and sage, where the enumerated mesophilic bacteria and psychrophilic counts did not excess than 4 log cfu/g and 2 log cfu/g, respectively during storage period at 4 ±1°C.

The obtained results indicated that, using of rosemary or sage at level of 3% led to delay the onset of organolyptic spoilage of carp fish fingers to the tenth day of cold storage, while to the fifth day in control sample.

Key words: Common carp – fish fingers- sage- rosemary- shelf-life - antioxidants – antimicrobial