

## Combined Effects of Thymol, Carvacrol and Packaging on the Shelf-Life of Marinated Chicken

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**Abstract :** The demand for marinated chicken worldwide, is continuously growing. To date, limited data on addition of active components of Essential Oils (EOs) to marinades for chicken preservation are available. The antimicrobial effect of carvacrol and thymol, added at 0.4 and 0.8% v/w to marinated fresh chicken, stored in air and under vacuum packaging (VP), for 21 days at 4°C, was examined. The samples were monitored for microbiological (total viable count (TVC), lactic acid bacteria (LAB), *Brochothrix thermosphacta*, *Pseudomonas* spp., total coliforms, *Escherichia coli*, yeasts and molds) and sensory attributes (odor characteristics). Our data supports that among the tested microorganisms, *Pseudomonas* spp., LAB and *B. thermosphacta* were the most dominant microbiota in the marinated chicken samples. Additionally, the use of active EOs components, especially the higher concentration (0.8% v/w) in combination with VP, retarded the growth of spoilage microbiota and resulted in a significant reduction of about 2.9-3.1 log cfu/g and a microbiological shelf-life extension of marinated chicken by > 6 days, as judged by TVC data. Interestingly, the combination of active components of EOs at the lower concentration (0.4% v/w) and packaging (air or vacuum) resulted in a significant sensorial shelf-life extension of 15 and >21 days, as compared to the controls' shelf-life of 9 days. The results of our study demonstrated the potential of the active components, carvacrol and thymol, as natural effective antimicrobial hurdles to control the growth of spoilage microorganisms in marinated chicken meat.

**Keywords :** chicken, essential oils compounds, marination, meat spoilage, preservation

**Conference Title :** ICFMR 2018 : International Conference on Food Microbiology and Research

**Conference Location :** Paris, France

**Conference Dates :** December 27-28, 2018