CARPATHIAN JOURNAL OF FOOD SCIENCE AND TECHNOLOGY

journal homepage: **http://chimie-biologie.ubm.ro/carpathian_journal/index.html**

CHITOSAN/CUMIN (*CUMINUM CYMINUM* L.) ESSENTIAL OIL EDIBLE BIODEGRADABLE COATING: ITS EFFECT ON MICROBIAL, PHYSICAL AND SENSORY PROPERTIES OF CHICKEN MEAT DURING REFERIGERATION

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https://doi.org/10.34302/crpjfst/2021.13.1.7

Article history:
Received:
8 February 2020
Accepted:
1 January 2021

Keywords:
Chicken meat;
Cumin essential oil;
Chitosan;
Microbial count;
Coating.

ABSTRACT

Chicken meat is a popular food around the world due to its high nutrient content, low fat content and relatively low cost. Perishable and enrich chicken meat caused it sensitive spoilage and fat oxidation, so reduce the shelf-life of the product. The aim of this study was to investigate the effect of chitosan (Ch) and cumin essential oil (CEO) on the quality and shelf life chicken meat. Ch-CEO coatings were prepared in three treats covered chitosan, cumin essential oil / chitosan and essential oil of cumin 0.2, 0.4 and 0.6%. The microbial tests (Total count, *Enterobacteriaceae*, *Staphylococcus aureus (S. aureus), Escherichia coli (E. coli)*, mold and yeast), the chemical tests (pH, Total volatile nitrogen (TVN), Thiobarbituric acid (TBA), Peroxide value (PV) and 2,2-diphenyl-1-picrylhydrazyl (DPPH) and sensory properties were assessed in 2, 5, 9 days. There was a significant difference in microbial load between control and treated samples with Ch-CEO (0.6%). The most antioxidant activity, TBA and PV have been shown to be CEO (0.6%). In all of concentration of CEO, pH and TVN decreased. Sensory properties in treating samples with Ch-CEO were acceptable in the second day, but in final storage period showed significant differences with the control sample. The results show that due to the antioxidant activity of CEO and the high antimicrobial activity of chitosan coating and the synergistic effect of both of them improved of sensory properties and increase shelf life chicken meat at the refrigerator temperature.