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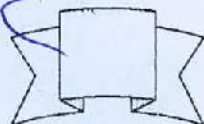




بالرسالة صفحات
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**THE EFFECT OF PACKAGING MATERIALS
AND MODIFIED ATMOSPHERE ON
THE SHELF LIFE OF MEAT
DURING COLD STORAGE**

by

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atmosphere on the shelf life of meat
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ABSTRACT

The effect of packaging materials namely, HDPE, PA/PE and PET/AL/PE were evaluated for their permeability to oxygen, nitrogen, carbon dioxide and water-vapor, thickness, clarity, weight of square meter, impact strength, elongation and heat sealing temperature. The evaluated packaging materials were used for packaging two different types of meat products, i. e meat chops and minced meat under air, vacuum, 100% CO₂, 100% N₂ and (60% CO₂ +40% O₂) . The packaged minced meat and meat chops were stored at 4±1°C for up to 18 and 24 day respectively. Samples of the meat products were analyzed at a various intervals to identify the changes occurred in their chemical, physical, microbiological and organoleptic properties. Whereas, at the termination of each storage period, data were collected which included gas composition inside packages, color, W.H.C., percentage weight loss, moisture content, TBA, pH, protein, lipid, TVN, aerobic bacteria, Psychrotrophic bacteria, anaerobic bacteria, lactic acid bacteria, Enterobacteriaceae, Pathogenic bacteria and Sensory evaluation.

The obtained results could be summarized in the following :-

- 1- The best package prolonged shelf-life of meat during cold storage under modified atmosphere was PET/AL/PE bags because it is impermeability of gases (O₂, N₂, CO₂) and water-vapor.
- 2- The best treatments of modified atmosphere was meat packaged under gases mixture (60% CO₂ + 40% O₂).
- 3- The study appeared inhibition effect for CO₂ on growth of spoilage microorganisms and Pathogenic bacteria i. e. Salmonella Staphylococcus aureus.
- 4- The primary advantage for the utilization of a N₂ – modified atmosphere is its ability to minimize weight losses.
- 5- Packaged under vacuum prolonged the shelf – life and reduce moisture losses.

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INTRODUCTION