Poster

EXTENSION OF THE SHELF LIFE OF READY TO EAT FOODS

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ABSTRACT

In industrialized countries, the increase in foodborne illnesses is due to changes in lifestyle and dietary choices, especially due to work habits that promote eating out. This requires strengthening sanitary controls to preserve public health. Globalization introduces new risks by importing products from countries with deficient regulations or prolonged transportation times [1]. Therefore, the precise evaluation of the shelf life of food is crucial for consumer safety, reducing food waste, and maintaining the economic viability of the food industry [2].

The "shelf life of food" is defined as the period during which a product maintains its safety, quality, and nutritional attributes under specific storage conditions, from production to consumption, preserving its sensory, physical, chemical, and microbiological properties according to the manufacturer's intentions. Previous studies in our laboratory showed that the shelf life of a specific brand of roasted pork loin, a pasteurized meat derivative, was in discrepancy with that indicated in the technical sheet. Our results demonstrated a microbial duration of 83 days instead of the established 150 days [2].

Based on these findings, the objective of this research is to extend the microbial shelf life of this food product by implementing modifications in its production process. To quantify the product's shelf life, an accelerated test at elevated temperatures (20°C, 30°C, and 40°C) has been carried out through viable counts of three microorganisms as possible responsible for food deterioration: lactic acid bacteria, aerobes, and molds and yeasts. This technique allows us to quickly estimate the period during which this product maintains its quality by simulating conditions that accelerate the natural deterioration process of the food [3].

The results of the previous study validated a shelf life in refrigeration between 0-7°C of 83 days for the roasted pork loin, with lactic acid bacteria as the main degradation agents. After implementing modifications in the temperature during the production process, the shelf life was extended to 150 days at refrigeration temperatures of 0-4°C, with aerobes being the predominant microorganisms responsible for deterioration, without observing growth of molds and yeasts in any of the experiments.

In conclusion, the proposed modifications in the production process are effective in extending the shelf life and ensuring the safety of roasted pork loin.

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