Relationship between microbial counts and lipid oxidation during ageing process of foal meat

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Statement of the Problem: Ageing is a very important process, the goal of which is for meat to become tenderer. Foal meat stands out especially because of its own tenderness just 24 hours post-mortem. The lack of reference values in aging process has led to different studies about the most appropriate management of foal meat during that period. However, the impact of ageing is inconclusive given the absence of a measurement methodology and reliable statistics. Therefore, the aim of this study was to determine the shelf-life of foal meat (Longissimus dorsi) aged at two different times (1 and 8 days outside of the carcass -T1 & T8-, at 4 °C) and the effect of the slicing process on day 1, 3, 6 and 9.

Methodology: The microbiological analyses were determined according to their corresponding ISO norms.

Findings: Based on the total mesophilic & psychrotrophic aerobic counts, Pseudomonas sp., moulds and yeasts, significant differences were found between samples T1 and T8, the shelf-life of foal meat T1 being 3 days. On the contrary, neither LAB nor enterobacteriaceae were affected by the aging period. There was a negative correlation between microbial counts and lipid oxidation depending on the aging period. In fact, lipid oxidation was significantly higher (p≤0.001) in samples T1 than those T8. Foal meat is rich in polyunsaturated fatty acids, which are highly prone to oxidation. Thus, ageing time is a direct cause of lipid oxidation and the no interaction between loin and steaks ageing showed that the trend in both kinds of meat was the same with or without a loin ageing.

Conclusion & Significance: Contrary to other species, a loin ageing process outside the carcass may not be necessary in foal meat. Consequently, a longer preservation time of foal steaks may be achieved, if the free oxygen is controlled.

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Biography
Maria J Cantalejo is a tenured Professor in the Department of Food Technology at the Public University of Navarre in Spain. She has her expertise in developing new food products and optimizing non-thermal process conditions to improve preservation of foods. She believes that a change in people's standard of life could be considered, mainly in the case of underdeveloped countries, since they could obtain some life essential raw materials. Therefore, one of her main projects is to develop new high quality products, safe, with a high nutritional value, with no additives added and long lasting at room temperature. This approach is responsive to eradicate hunger from the world.

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