Cristina Lopez, J Food Microbiol Saf Hyg 2017, 2:4(Suppl)
DOI: 10.4172/2476-2059-C1-005

7th EUROPEAN FOOD SAFETY & STANDARDS CONFERENCE

November 13-14, 2017 | Athens, Greece

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Microbiological quality of vacuum-packed and refrigerated beef

The present study had a main objective to evaluate the bacterial growth of microorganisms indicating hygienic-sanitary quality and spoilage in chilled (0 – 4oC) and vacuum-packed beef. We study the detection and quantitation of total aerobic mesophilic, total coliforms and Brochothrix thermosphacta for a 120 day. Ninety strip loin (Longissimus dorsi) samples from two different slaughter plants authorized to export were used. Those samples were packed and kept under refrigerated conditions. The samples were analyzed in the Laboratorio de Microbiología de los Alimentos de la Facultad de Veterinaria - Universidad de la República on days 0, 15, 30, 45, 60, 75, 90, 105 and 120. Growth of microorganisms previously mentioned was evaluated together with the maintenance or loss of vacuum, temperature and the presence or absence of odor when opening the bag of each sample. The growth medium used for these analyzes were Plate Count Agar (PCA) for the standard plate count of Aerobic mesophilic microorganisms, Violet Red Bile Agar (VRBA) for total Coliforms plate count and Streptomycin Thallium Acetate Actidione Agar (STAA) for plate count of Brochothrix thermosphacta. In conclusion, we can say that all microorganisms studied obtained initial counts (day 0) within the accepted national and international limits. In terms of total aerobic mesophilic, its average exceeded the limit of 7 log CFU/g for both slaughter plants on day 120. By the other side, total Coliforms did not reach the limit of 2 log CFU/g considering the average of both slaughter plants. Brochothrix thermosphacta increased towards the end of the study as it was expected, since it is alternative bacteria. These counts were produced thanks to the good storage conditions, low initial load of microorganisms, proper pH after maturation and proper vacuum packaging.

Biography

Cristina López is currently working as Doctor of Medicine and Veterinary Technology at Uruguay. She has done specialization in Food Safety and Agri-Food Quality, Argentina. She also worked as Professor of Meat Science and Technology, Veterinary College, Uruguay and Professor of Food Microbiology.

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