Bacteriological status and detection of adulteration with donkey meat by PCR in frozen beef meatballs

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Abstract:

Abstract: 50 packed frozen beef meatballs which commercially marketed in Assiut City were collected for the occurrence of Aeromonas spp., Yersinia spp., Listeria spp. and Salmonella spp. Other bacteriological aspects; aerobic plate count (APC), total Staph. aureus, psychrotrophic bacteria and anaerobic bacteria were also counted. In addition, adulteration of donkey meat in this product was determined by polymerase chain reaction (PCR). The achieved results revealed that the mean APC, total Staph. aureus, psychrotrophic count and anaerobic bacterial count of frozen beef meatballs were 5x10^6, 9x10^2, 1x10^6 and 6x10^2 CFU/g, respectively. 32%, 48%, 54 and 4% of samples were positive for the presence of Aeromonas spp., Yersinia spp., Listeria spp. and Salmonella spp., respectively. Assay of PCR revealed that the adulteration rate was 20% (2/10) for donkey meat in frozen meatballs. In conclusion, most of the examined frozen meatball samples revealed high levels of microbial contamination. Therefore, this product represent public health hazards considering the incidence of food poisoning microorganisms such as A. hydrophila, Y. enterocolitica, L. monocytogenes, S. Typhimurium and S. Enteritidis. Moreover, it was concluded that there was adulteration of meatballs, in which inferior quality and illegal donkey meat is mixed into beef. It was recommended that the generally acceptable microbial guideline value for psychrotrophic bacteria of frozen meatballs (kofta) set at

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