

TITLE: ISOLATION OF *Staphylococcus aureus*, *Salmonella* spp. AND VEROTOXIGENIC *Escherichia coli* IN BOVINE MEATS MARKETING IN SUPERMARKETS AND FREE FAIRS IN CAMPO GRANDE – MATO GROSSO DO SUL

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ABSTRACT

Cases of contamination of meat products that result in food outbreaks are most often caused by the transmission of *Staphylococcus aureus* through inadequate hygiene practices during slaughter and handling of meat, *Salmonella*, considered to be one of the most important pathogenic microorganisms which may be present in red meat, with the occurrence of outbreaks increasing considerably over the years and *E. coli* (VTEC) one of the main bacteria that can contaminate the meat, and can be potentially transferred from the intestine or bovine leather during slaughter. The present study aimed at the microbiological isolation of *Staphylococcus aureus*, *Salmonella* spp. and Verotoxigenic *Escherichia coli* in 39 meat samples collected in the city of Campo Grande, MS. For the detection of *S. aureus* in meat samples, the methodology described in IN 62 of August 2003 – Official Analytical Methods for Microbiological Analysis for Control of Animal and Water Products was used. For *Salmonella* spp. the samples were processed by the technique described by the International Organization for Standardization (ISO 6579: 2002), with modifications, and the decarboxylation of lysine was added. In the *Salmonella* positive samples, the isolates were analyzed by real-time PCR (qPCR) to verify the presence of the *invA* gene and confirm the bacterial genus. For the detection of VTEC in the samples, the methodology described in the Compendium of Methods for the Microbiological Examination of Foods, 2001 was used. Among the 39 samples of meat used from different cuts (hard cut, soft cut, rump cut and muscle), 10 (25.6%) were positive for *S. aureus*, confirmed by catalase, coagulase and Gram stain tests, and the counts ranged from 9.2×10^3 to 1.8×10^4 UFC/g of meat. 5 (12.80%) were positive for *Salmonella* spp. In bacteriology an qPCR and presented the *invA* gene, which is associated with virulence and is conserved in bacteria of the *Salmonella* genus, confirming the bacteriology result and none presenting typical isolates for verotoxigenic *E. coli*. Hygienic practices during meat management, as well as health education, emphasizing personal hygiene habits, can be efficient in reducing contamination in meat to avoid that the consumer is affected by the disease transmitted by food.

Keywords: meat; microbiological isolation; real-time PCR; transmission.

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