

Microbiological evaluation and effectiveness of meat handling in vulnerable communities (Favelas) in Campos dos Goytacazes, Rio de Janeiro.

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Thematic area: Health.

Abstract: Globally, food-borne illnesses linked to contaminated meat products continue to be a serious public health concern, especially in underdeveloped nations where proper handling and storage practices may be lacking. Protecting consumers health and boosting trust in regional food production systems depend on ensuring the microbiological quality and safety of meat. Through microbiological assessment and instructional demonstrations on meat quality, the objective of this extension program was to raise awareness and enhance hygienic handling practices among community members and food handlers in "Favelas" communities that are situated in the Municipal of Campos dos Goytacazes, Rio de Janeiro, Brazil. Meat handlers, vendors, and community stakeholders were the target audience for the activities, which were conducted in conjunction with local health professionals, meat sellers, and community members at specific markets and slaughter locations. In addition to demonstrations of microbiological evaluation techniques used to identify indicator organisms like *Salmonella* spp., *Escherichia coli*, and total bacterial counts in meat samples, extension actions included educational sessions on the sources of microbial contamination during meat processing, transportation, and storage. In order to lower the risk of contamination and avoid food-borne illnesses, participants received training on safe meat handling, cleanliness techniques, and suitable storage settings. Additionally, participants learned about the fundamental microbiological evaluation techniques used to evaluate the quality and safety of meat. Improved knowledge of hygienic meat processing and storage procedures, increased cooperation between researchers and the "Favelas" communities, and residents' and merchants' active involvement in training sessions were all evidence of the extension's impact. The results demonstrated that the objectives of the extension activity were achieved through effective knowledge transfer, increased adoption of hygienic practices, and enhanced community engagement in promoting safer meat consumption and public health protection in the study area.

Keywords: *Salmonella* spp., *Escherichia coli*, extension