

**Title: STRATEGIES FOR THE VERIFICATION OF BEEF PROCESSING SANITARY
HYGIENIC CONDITIONS**

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Abstract:

Brazil has established itself today as the largest beef supplier in the world. Therefore, investments in technologies geared towards quality programs are needed to meet international sanitary requirements. For being a perishable food, the meat needs the use of conservation methods immediately after the discount. To validate the programs implemented in industries, microbiological analyses applied to process verifications are required. The aim of this study was to evaluate a strategy for the verification of sanitary beef processing conditions in slaughterhouses. The Petrifilm® method (3M) was used for Enterobacteria, *Escherichia coli*, fecal coliform and total coliform counts, from fragments obtained from the esophageal muscle, diaphragm, masseter and meat scraps originated from the boning step, since these anatomical parts of carcasses are easily contaminated with rumen or faecal content. Environmental monitoring was also conducted, by collecting swabs of bleeding, skinning and boning knives, as well as cutting room benches. A total of 24 samples were analyzed, 12 environmental and 12 from the carcasses. When evaluating the utensils and countertops, only 1/12 (8.33%) showed enterobacteria counts greater than 1.0×10^2 CFU / cm², while 7/12 (58.33%) showed *E. coli* scores ranging from 6.0 to 3.6×10 CFU / cm², exceeding the maximum levels recommended by the American Public Health Association and the Ministry of Livestock Agriculture. Regarding the carcasses, only 1/12 (8.33%) samples showed Enterobacteria esophageal counts, of 1.76×10^2 CFU / g, in accordance to the current national microbiological standards. The environmental and carcass samplings allowed for the verification that industry quality programs are working satisfactorily and can be used as checkpoints for preventive actions implemented by quality programs in the beef processing industry.

Keywords: Enterobacteriaceae, coliforms, *E. coli*, quality assurance programs

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