Monitoring of *Salmonella* spp., *Escherichia coli* and *Clostridium perfringens* in sanitary conveyor of poultry slaughterhouses and frozen cuts of chicken from supermarkets.

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Abstract: Brazil was the third chicken meat producer according to the 2013 world ranking, with 12.30 million tonnes. This highest production results in increase of industry preoccupation with the transmission of harmful pathogens to human. However, proper hygiene and management in the manipulation of meat may inhibit bacteria dissemination. Thus, this study aimed to evaluate the contribution of the pre-operational and operational hygiene in the microbiological control through PCR detection of *Salmonella* spp., shigatoxigen *Escherichia coli* (STEC), enteropathogenic *E. coli* (EPEC) and *Clostridium perfringens* present in sanitary conveyor of Brazilian slaughterhouses. In addition, the presence of these pathogens was verified in frozen cuts of chicken commercialized in supermarkets. Thus, 311 samples of sanitary conveyors were collected using sterile swabs, in four different periods, before and after the operational and pre-operational hygiene. From frozen cuts of chicken, 20 samples were collected from eight supermarkets. All swabs were placed in tubes containing 5 mL of Brain Heart Infusion (BHI) broth and incubated at 37°C for 24 hours. In turn, cuts of chicken were rinsed in 400 mL of 0.1% sterile peptone water, which were equally divided and incubated at 37°C for *E. coli* and *C. perfringens* culture*,* and at 42°C for *Salmonella* spp., both during 24 hours. After pre-enrichment, an aliquot of 1.0 mL was transferred to a tube containing BHI broth to proceed the bacterial culture. DNA of all samples were extracted by boiling method and subsequently submitted to PCR reactions. *Salmonella* spp. was detected by amplification of a specific band of *invA* gene*.* The amplification of *eae* gene was to identify *E. coli* EPEC*,* while *stx1* and *stx2* genes were related to *E. coli* STEC, and *C. perfringens* was identified by the *cpa* gene presence. In poultry slaughterhouse, 7.40% of samples were positive for EPEC. From 20 samples of cuts of chickens, four samples were positive for EPEC, two for STEC and four for *C. perfringens*. None of the samples were positive for *Salmonella* spp. The results showed that bacterial contamination was present from the slaughterhouse until the final product in supermarkets. Certainly, proper hygiene and management in all stages of production may reduce the transmission of these harmful pathogens to humans.

Key words: Human health, molecular biology, pathogen, poultry industry.

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