TITLE: PRESENCE OF *CAMPYLOBACTER* SPP. IN CHILLED CHICKEN (GALLUS GALLUS) HEART

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ABSTRACT:

There is a growing consumer demand for nutritious and safe food worldwide. At the same time, contamination by bacteria, especially of animal origin, remains a major public health problem, causing a significant increase in foodborne diseases. *Campylobacter* is considered to be the most common bacterial cause of human gastroenteritis in the world. Therefore, the aim of this study was to verify the presence of *Campylobacter* spp. in chilled chicken heart samples acquired in an industry under sanitary inspection, located in the West Zone of the city of Rio de Janeiro, Brazil. A total of 50 chilled chicken heart samples were collected for three consecutive weeks, in December 2015 and January 2016. The samples were divided into two groups: one intentionally contaminated with *Campylobacter jejuni* ATCC 33291, on purpose of observing the efficiency of the gamma irradiation (Co60) process in the control of *Campylobacter* spp.; and the other group, naturally derived from the industrial plant. The *Campylobacter* strains isolated from the not intentionally contaminated group were characterized by biochemical, PCR and antimicrobial susceptibility tests. The results obtained in this study demonstrated the presence of fluoroquinolone-resistant strains of *Campylobacter coli* and *Campylobacter jejuni* in chilled chicken heart samples derived from the industry. Food irradiation process was efficient in the control of *Campylobacter* spp. at 1.5 kGy, 3.0 kGy and 4.5 kGy doses. The technique can effectively eliminate or reduce foodborne microorganisms without significant impact and change in composition, ensuring food safety and nutritional quality. Although the Brazilian current legislation does not establish a microbiological standard for *Campylobacter* spp. in animal-origin foods, results obtained in this study suggest that these observations should be taken into account because of the importance of these bacteria representing a risk to public health.

KEYWORDS: Chicken heart, *Campylobacter* spp., Foodborne illness, Antimicrobial resistance, Food irradiation.