

Presence of *Campylobacter* Spp. in Whole Chickens and Viscera Marketed in the Municipality Girardot Aragua State, Venezuela

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SUMMARY

With the aim of detecting *Campylobacter* spp in benefited chickens and their viscera expended in the Girardot municipality, of the Aragua state, Venezuela, through a descriptive and retrospective investigation, a total of 48 chickens and their viscera were taken through a non-probability sample divided into three (03) lots, which were evaluated by means of a rapid plaque test, finding: *Campylobacter* spp. in lot (01) in 100% for chickens and viscera, in lot (02), 68.75% in chickens and 50% in viscera, and in lot (03) 75% in chickens and 56.5% in viscera; showing an overall positivity of 81.25% for whole chickens and 68.50% for viscera. The number of colony forming units (CFU), higher than the infecting dose for individual's ≥ 500 CFU, was obtained in 43.75% of the chickens and 25% of the viscera of the first lot, in 12.5% of chickens and entrails from the second lot, and in 6.25% in chickens and entrails from the third lot. In determining the degree of correlation between CFUs in chickens and viscera, an association ($P < 0.005$) was observed between these variables.

INTRODUCTION

The process of industrialization of the poultry sector has achieved a high degree of automation, however, such progress does not translate into an improvement in the quality of the meat, rather, they contribute to increase the microbial load of the poultry carcasses gaining importance today *Campylobacter* spp, among other microorganisms involved in food-(ETAs) transmitted diseases [1]. Infections among species of the family or *Campylobacteraceae* have campylobacteriosis *Campylobacter enteritis*, considered the most important in public health, its main agents are *C. jejuni* and *C. coli* (can also cause systemic infections and complications after infection; Agents Guillain Barre GBS) the impact of public health campylobacteriosis is increasing [2]. The genus *Campylobacter*, is dated and comprising gram negative bacilli curved (gullwing), with polar flagellation, Microaerophilic, do not use sugar, but energy of amino acids, are thermotolerant species 42 °C, zoonotic, birds are an important reservoir, are the causative agents of diarrhea in humans (first cause in industrialized countries and second or third cause in Latin America). They have been isolated 25 species and 9 subspecies [2]. *Campylobacter* spp, requires optimal growth conditions (5% O₂, CO₂ 3-15% and 85% N), mentioned three species of *thermophilic* *Campylobacter* causing significant health problems in humans (*C. jejuni*, *C. coli*, and *C. lariidis*) and outnumber cases of enteritis caused by *Salmonella* sp. and *Shiguelas* sp. [3]. According Seminar INFAL 2015 [4], following up on time pathogens *Campylobacter* spp, it was reported steadily increasing in England and Wales between 1997 and 2002 beating Rotavirus and Salmonella; even as [5]. At the Ninth International Congress of Tropical Medicine and Health held in Sweden indicated that cases of campylobacteriosis were more than doubled between 1988 and 2013, i.e. 3127 cases in 7499, an issue that has worsened since 1995. The center for Disease Control and Prevention (CDC) [6], in its surveillance program of *Campylobacter* spp, said that for this year experienced an increase of 14% over the years 2006-2008, noting that for every case of campylobacteriosis reported, there are 30 undiagnosed cases domestic and wild animals serve as host to the bacteria, causing pollution 90% of chicken carcasses during processing [7]. Studies conducted in Venezuela, specifically in the Aragua state by [8] reported *Campylobacter* spp in samples of whole, breasts, thighs and wings 75%, 95.83%, 83.33% and

70.83% respectively chickens, found in the first three samples indicated conditions ≥ 500 units colony forming (CFU) per ml. Other researchers [9], [10] found *Campylobacter* spp in a 70.83% in liver and 48.95% in chicken gizzards; likewise [11] in Chile reported that poultry liver 95.1% recorded in Brazil isolation and a percentage that goes from 13.5 to 78.7. Campylobacteriosis is a zoonotic disease caused by eating food contaminated with bacteria of the genus *Campylobacter*: as raw milk, seafood, poultry and other animals (cross contamination), as well as in the untreated water; It occurs most often in children and young people, where it was reported 24.08 and 10.54% respectively in 2012 and in adults between 20 and 64 years and over reported 14.54 and 15.26. It is characterized by diarrhea, cramping, abdominal pain, fever, nausea and vomiting, some sequels neurological in which the syndrome Gillian Barre Syndrome (GBS) and Miller Fisher syndrome (MFS) [12]. The aim of the study was to analyze the prevalence of *Campylobacter* spp in whole chickens packed and viscera three lots traded in the municipality Girardot Aragua, Venezuela State terms of ensuring public health. Campylobacteriosis were more than doubled between 1988 and 2013, i.e. 3127 cases in 7499, an issue that has worsened since 1995.

CONCLUSIONS

Detection of *Campylobacter* spp was 81.25% for chickens and 68.50% for the viscera, and found to lot 1 had the highest levels of contamination 100% for both samples, followed by lot 3, 75% and 68.75% respectively for broilers and viscera, and the lowest values were found detection in lot 2, with 68.75% chickens and 50% viscera, which is indicative of low hygienic conditions operability of chicken processing plants in the plots studied. Statistical results indicate a correlation between samples of chickens and viscera of the lots analyzed, indicative of the association between colony forming units, found in chickens, with those found in the viscera. Based on the infective dose of bacteria to some individuals (≥ 500 CFU) in order to cause disease risk was represented by 43.75% chickens and 25% of the viscera of lot 1, and 12.5% for the samples studied in the lot 2 and finally 6.25% of the samples lot 3. It is observed that the hygienic conditions of the plants beneficiary chickens brands evaluated, lack of hygiene and control of critical points in the processing of products intended for human consumption.

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