Title: Behavior of *Salmonella* in chicken breast in different times and temperatures

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Abstract

Salmonella is a major causative agent of foodborne diseases and this is a global public health concern. Chicken meat is one of the most related food products for holding *Salmonella*. According to the Brazilian laws, the room temperature during the cutting or deboning poultry carcasses needs to be kept at maximum at 12 °C. However, this temperature represents unhealthy cold conditions for employees. Thus, studies on the growth and survival of pathogenic bacteria in chicken meat submitted to different temperature conditions during slaughter and processing are necessary. Therefore, this work studied the behavior of *Salmonella* Enteritidis ATCC 13076 in organic chicken broilers at different temperature and exposure times. Chicken breasts were characterized and evaluated for their initial microbiological quality, color, pH and CRA. Pieces of 10 g were contaminated to 10^5 CFU/g. After wards, the samples were exposed to temperatures of 12, 14 and 16°C for 1 or 2h, simulating the room temperature of cut and packaging of commercial slaughterhouses. Subsequently, the pieces were stored at 4 °C. After 48, 96, 144, 192 and 240 h of the treatments, CFU counting were performed on deoxycholate-lysine-xylose (XLD) agar plates. The bacterial counts were around of 5.14 and 4.85 log CFU/g for all treatments. Therefore, non-significant difference ($p<0.05$) in CFU counting was observed neither the exposure time nor the temperature conditions. It was found that temperatures and times of storage did not make a difference in the microbiological counts of contaminated chicken breasts after 10 days (240 h) of treatment. This suggests that room temperature of cutting and deboning area could be kept higher than 12 °C, (up to 16ºC for 2 hours) avoiding unhealthy cold, and reducing the production costs. Obviously, more studies to determine the best work conditions for both employees and guarantee safe food products and are needed, including with other *Salmonella* strains

Biography

Melina Cruzado, PhD student of Department of Agroindustry, Food and Nutrition, Luiz de Queiroz College of Agriculture São Paulo University. She is from the northern highlands of Peru. Both in the master's degree and in the doctorate she has worked with the identification of pathogens in milk and derivatives, as well as in projects related to food microbiology, as a member of a research group in water and food microbiology.

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