

TITLE: ANTIMICROBIAL SUSCEPTIBILITY OF *ESCHERICHIA COLI* ISOLATED FROM CHICKEN MEATS COMMERCIALIZED IN SUPERMARKETS OF THE FEDERAL DISTRICT

AUTHORS: FERREIRA, A.C.A.O., VELOSO, R.A., PAVELQUESI, S.L.S., SILVA, I.C.R. ORSI, D.C.

INSTITUTION: LABORATÓRIO DE CONTROLE DE QUALIDADE, FACULDADE DE FARMÁCIA – UNIVERSIDADE DE BRASÍLIA, CAMPUS DE CEILÂNDIA (CENTRO METROPOLITANO, CONJUNTO A, LOTE 01, CEILÂNDIA, DISTRITO FEDERAL, BRASIL, CEP: 72220-900)

ABSTRACT:

Escherichia coli strains are considered to be excellent indicators of antimicrobial resistance because they are part of the normal microbiota of people and animals. Antimicrobial resistance is a global health concern in both human and veterinary medicine and foodborne pathogens transmission of antibiotic resistant from contaminated food has been recognized as an important hazard for human health in the past few decades. Poultry is an important reservoir for pathogenic *E. coli* and chicken meat is attractive for consumers worldwide, so the measures to preserve the safety of this meat are important issues. The aim of this study was to quantify thermotolerant coliforms in samples of cooled chicken meat commercialized in the Federal District and to evaluate the antimicrobial resistance of the isolated *E. coli* strains. The fourteen chicken meat samples analyzed in this study were collected in five supermarkets of the Federal District. For the determination of the most probable number of thermotolerant coliforms the samples were inoculated in test tubes containing *Escherichia coli* broth (EC broth). From the EC broth *E. coli* strains were isolated on MacConkey Agar medium. The *E. coli* suspected colonies were submitted to molecular identification by the PCR technique and the antimicrobial susceptibility test. Of the 14 chicken samples analyzed, 10 samples (71.4%) had thermotolerant coliforms, but the enumeration of these samples was within the limits allowed by Brazilian legislation (maximum of 1.0×10^4 MPN / g). Of the 10 chicken meat samples that showed positive enumeration for thermotolerant coliforms, it was possible to isolate strains characteristic of *E. coli* in 7 samples. Bacteria isolated were identified by PCR amplification of the *MalB* gene. The antimicrobial susceptibility profile of the 17 *E. coli* strains isolated from the chicken

meat samples showed that the strains were more resistant to Sulfonamide (52.9%), Tetracycline (35.2%) and Ciprofloxacin (35, 2%). And of the 17 strains of *E. coli* tested, three strains (17.5%) were classified as multiresistant (strains resistant to three classes of antibiotics or more). Thus, it was possible to conclude that the existence of strains with antimicrobial resistance in samples of cooled chicken meat commercialized in the Federal District represents a risk to the consumer, due to the possibility of transmitting this resistance to humans.

Keywords: poultry meat; thermotolerant coliforms; *Escherichia coli*; antimicrobial resistance

Development Agency: acknowledgment to CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior) for the financial support