

TITLE: ANTIMICROBIAL SUSCEPTIBILITY OF *SALMONELLA* RECOVERED FROM FRESH TILAPIA COMMERCIALIZED IN SUPERMARKETS OF THE FEDERAL DISTRICT, BRAZIL

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ABSTRACT: Tilapia (*Oreochromis niloticus*) is a freshwater fish that stands out as one of the most popular fish in the consumer market due to its attractive characteristics, such as white meat without bones and a with mild flavor. However, this food is extremely perishable and subject to bacterial contamination. *Salmonella* spp. is one of the main bacteria that cause foodborne diseases and it is associated with resistance to several antimicrobials, including important drugs used in human therapy. The aim of this study was to investigate the presence of *Salmonella* in fresh tilapia samples sold in the Federal District and to evaluate the antimicrobial resistance of these isolated strains. The twenty samples of fresh tilapia analyzed in this study were collected in five supermarkets in the Federal District. For the *Salmonella* research, the samples were inoculated in 0.1% peptone water (w/v) at 37°C, 24 h and aliquots of this broth were transferred to the selective broth tetrathionate and iodine solution (37°C, 24 h). From the selective broth, the strains of *Salmonella* were isolated in the differential media of *Salmonella-Shigella* Agar and Xylose Lysine Deoxycholate Agar (37°C, 24 h). And the isolated colonies of *Salmonella* were subjected to molecular identification by the PCR technique and to the antimicrobial's susceptibility test by the disk-diffusion technique (Kirby-Bauer method). The results of this study showed that of the 20 samples analyzed, 12 samples (60%) presented the bacterium *Salmonella* spp. confirmed by the detection of the gene *invA* in the molecular analysis and, therefore, according to Brazilian legislation, they were unfit for consumption. The antimicrobial susceptibility profile of the isolated *Salmonella* strains showed that 92.8% were resistant to Tetracycline, 78.6% to Sulfonamide, 78.6% to Amoxicillin with Clavulanic Acid, and 50% to Chloramphenicol. Of the 14 strains of *Salmonella* tested, 8 (57.2%) were classified as multi-resistant. Management practices from capture to fish storage added to the indiscriminate use of antibiotics in fish farming may favor the presence of multidrug-resistant *Salmonella* strains in tilapia. Thus, it was possible to conclude that fresh tilapia sold in the Federal District represents a risk to consumer health, due to the possibility of disease transmission by to the high presence of *Salmonella* in the samples and also by the high presence of strains with antimicrobial resistance.

Keywords: tilapia; freshwater fish; *Salmonella*; antimicrobial resistance

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