

TITLE: ANTIMICROBIAL RESISTANCE GENES PRESENT IN *SALMONELLA* ISOLATED FROM FRESH TILAPIA

AUTHORS: FERREIRA, A.C.A.O.; PAVELQUESI, S.L.S.; RIBEIRO, L. A., ARAÚJO, K. A.; RODRIGUES, L. F. S.; MONTEIRO, E. S.; SILVA, I.C.R.; ORSI, D.C.

INSTITUTION: LABORATÓRIO DE CONTROLE DE QUALIDADE, PROGRAMA DE PÓS-GRADUAÇÃO EM CIÊNCIAS E TECNOLOGIAS EM SAÚDE, UNIVERSIDADE DE BRASÍLIA, CAMPUS DE CEILÂNDIA (CENTRO METROPOLITANO, CONJUNTO A, LOTE 01, CEILÂNDIA, DISTRITO FEDERAL, BRASIL, CEP: 72220-900)

ABSTRACT: Currently, an increasing number of antibiotic resistances has been observed in bacteria. *Salmonella* stands out as a zoonotic bacterium and can be isolated from various foods of animal origin, including tilapia, which is one of the main fish species produced in Brazil. The aim of this study was to evaluate the presence of the antimicrobial resistance genes (blaCTX, tetB, sul2 and floR) in *Salmonella* bacteria isolated from fresh tilapia. For analysis, a total of 16 strains of *Salmonella* were isolated from 20 samples of fresh tilapia sold in the Federal District. The bacterial DNA was extracted by the kit NucleoSpin Plasmid®, quantified and subjected to molecular identification by the PCR technique. The results showed that all 16 strains of *Salmonella* showed resistance genes, with a higher prevalence of the sul2 gene (78.6%) associated with resistance to Sulfonamide, followed by the blaTEM gene (64.3%) associated with resistance to Beta-Lactam antimicrobials. The floR gene associated with resistance to Chloramphenicol was present in 50% of the strains, followed by the tetB gene associated with resistance to Tetracycline found in 28.6% of *Salmonella* isolates. Of the 16 *Salmonella* isolates, 8 strains (57.1%) had three resistance genes simultaneously in their DNA. Antimicrobial resistance is a public health problem, since these resistance genes can be transferred to other pathogenic bacteria, aggravating the disease caused by the microorganism in the infected individual. Thus, it is possible to conclude that the detection of resistance genes in *Salmonella* isolated from tilapia, makes this food a potential reservoir of multidrug-resistant pathogenic bacteria.

Keywords: tilapia; *Salmonella*; antimicrobial resistance genes

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

Ana Carolina Almeida de Oliveira - acarolina.olive@gmail.com