

TITLE: Biofilm production and antimicrobial susceptibility profile from foodborne *Escherichia coli*

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ABSTRACT:

The presence of *Escherichia coli* resistant to multiple antibiotics is often associated with increasing outbreaks of infectious intestinal diseases, such as diarrhea. Sometimes these microorganisms may still have the ability to form bacterial aggregates, called biofilms, which confer greater intrinsic resistance to antimicrobial agents. As the food consumed *in natura*, such as fish fillet, are most susceptible to cross-contamination, the objective of this research was to identify the profile of antimicrobial susceptibility and biofilm formation capacity of isolates of *E. coli* obtained from fresh tilapia fillets. Four strains of *E. coli* were previously isolated from samples of tilapia (*Oreochromis niloticus*) from the retail market of the city of Sobral – CE. The isolates were identified as P12, P25, P35 and P36 and submitted to the antibiotic sensitivity test by VITEK®2 automated system, and classified as sensitive, intermediate resistant or resistant. For biofilm formation evaluation, the biomass was quantified by staining with violet crystal and absorbance at 590 nm. The experiment was carried out in triplicate to obtain the mean and standard deviation, and the isolates classified as: nonadherent, moderately producer, and strongly biofilm producer. Through the results obtained it was verified that beyond all the samples presented resistance to ampicillin, at least three were intermediately resistant to cephalothin and amoxicillin. The P12 sample was, also, resistant to quinolones tested. In addition, all isolates demonstrated strong biofilm formation, with absorbance averages between 0.32 and 3.15 in the quantification of biomass. In conclusion, it was identified that *E. coli* isolates from tilapia fillets present antimicrobial resistance profile, in addition to a high capacity of biofilm formation.

Keywords: *Escherichia coli*; Biofilm; Antimicrobial resistance.