TITLE: TETRACYCLINE AS AN ALTERNATIVE FOR CONTROLLING DIFFERENT STRAINS OF *Campylobacter jejuni* IN SESSILE FORM

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ABSTRACT:

Campylobacter jejuni is the most prevalent pathogen in foodborne gastroenteritis in the world, whose chicken meat represents the food most involved in the occurrences. The increase in the resistance profile of this bacterium affects several sectors, including aviculture and public health. Our study aimed to perform qualitative and quantitative comparative analysis on the anti-biofilm effect of five classes of antimicrobials: ciprofloxacin (CIP), erythromycin (ERY), tetracycline (TET), meropenem (MER) and colistin (COL), in different surfaces: stainless steel (SS), polyurethane (PU) and polypropylene (PP). Thirty-five strains of *C. jejuni* isolated from 442 commercial refrigerated or frozen chicken carcasses, from the Brazilian poultry industry, were evaluated. All of the isolates were submitted to biofilm formation supplemented with 5% chicken juice to simulate industrial conditions. The treatment with antimicrobials intensified biomass production, with the exception of tetracycline, which showed an effect on bacterial and biofilm matrix control, observed in scanning electron microscopy. The concentrations necessary for biofilm control were strain-dependent and varied as follows: CIP (28 - >256mg/L), TET (4 - >256mg/L), COL (32 - >256mg/L), ERY (32 - >256mg/L) and MER (128 - >256mg/L). Only for TET, we observed the existence of 3/35 (8.6%) of susceptible sessile strains, no statistical difference in comparison to the results of the planktonic form ($p<0.05$) and MIC_{50} value equivalent to 128mg/L, in to the detriment of other antimicrobials whose values were >256mg/L. SS (BFI = 2.686) and PU (BFI = 1.735) were the most and least suitable surfaces, respectively, for the production of treated biomass, but in all surfaces tested, TET (BFI = 0.333) inhibited the sessile form of *C. jejuni.* In conclusion, the biomass production is intensified in the presence of the tested antimicrobials, except for TET, whose effect can be used as a strategic control against the sessile form when properly applied in the poultry production chain.

Keywords: Biofilm, Campylobacteriosis, Antimicrobial resistance, Public health

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