

TITLE: EVALUATION OF THE SALMONELLA BIOFILM FORMATION CAPACITY ISOLATED FROM FROZEN CHICKEN CUTS.

AUTHORS: PINTO, T. L.; VACCARI, M. T.; SERENO, M.J.; PEGORARO, K.; PERIN, A.P.; RODRIGUES, C.D.; SCHMIEDT, J.A.; BARCELLOS, V.C.; BERSOT, L. S.

INSTITUTION: UNIVERSIDADE FEDERAL DO PARANÁ – SETOR PALOTINA, PALOTINA, PR (RUA PIONEIRO, 2153, JARDIM DALAS, CEP 85950-000, PALOTINA – PR, BRAZIL)

ABSTRACT:

Biofilm formation is an important source of contamination to be considered in the food industry. This is due to the ability of some microorganisms to adhere to surfaces and utensils and the difficulty in their removal. One of the main microorganisms capable of forming biofilm and associated with foodborne diseases is the *Salmonella* genus, which has great importance in poultry products. The objective of this work was to evaluate and characterize the biofilm formation capacity of *Salmonella* sp. isolated in a previous study involving the detection of frozen chicken pathogens in the commerce of the state of Paraná, which were submitted to serotyping. To evaluate the biofilm formation capacity, the modified Stepanović (2000) methodology was used. The biofilm formation was classified as follows: strains that presented $Doa \leq Docn$ were considered non-forming, strains that presented $Docn < Doa \leq 2 \times Docn$ were considered weakly biofilm forming, strains that presented $2 \times Docn < Doa \leq 4 \times Docn$ were considered to be moderately biofilm forming and strains that presented $4 \times Docn < Doa$ were considered strongly biofilm forming. Of the 98 strains evaluated, 78 (79.6%) were classified as weakly biofilm forming and 20 (20.4%) as non-biofilm forming. Although the poor capacity of biofilm formation prevailed in the study, the fact that 79.9% produced biofilm is of great concern because it is a strains isolated from frozen chicken cuts, found at the disposal of the consumer in the market and indicating possible failures or difficulty in controlling the industry over biofilm. The poor formation or absence of biofilm formation is probably due to the intrinsic characteristics of the strains with low adhesion on the polystyrene surface, but this adhesion may change to other materials such as polyurethane, polypropylene and stainless steel, which are the main materials in the industry.

Keywords: contamination, polystyrene, surface adhesive.

Development Agency: Conselho Nacional de Desenvolvimento Científico e Tecnológico