

TITLE: ACTION OF DIFFERENT PERACETIC ACID CONCENTRATIONS ON BIOFILMS OF *SALMONELLA* SPP. IN POLYPROPYLENE SURFACE

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ABSTRACT:

Salmonella sp. presents widely distributed in nature and can be found in a variety of foods, such as fruits, vegetables, raw milk, and chicken meat. Combined with the genetic selection, this microorganism presents characteristics such as resistance to antibiotics, enzyme production expanded spectrum betalactamases (ESBL), biofilm formation and resistance to the sanitizers. Thus, the aim was assessing the ability of biofilm formation of *Salmonella* spp. in polypropylene surface and check the action of different peracetic acid (AP) concentrations on the removal of the biofilm formed. Thirteen isolates of *Salmonella* spp. were used, which presented the ESBL production, belonging to serotypes *S. Typhimurium* (n = 6), *S. Heidelberg* (n = 4) and *S. Ndolo* (n = 3) isolated from meat cuts of poultry. Biofilms were produced in polypropylene coupons in duplicate in Luria-Bertani broth adjusted in 0.5 MacFarland scale for every culture and incubated at 37°C/96h. Later, the coupons were washed with 10 mL of Phosphate-Buffered Saline and frictioned with sterile swabs. At the same time, coupons were treated with MIC, 0,1 and 0,2% of AP for 10 minutes, with subsequent friction for swabs. In both cases, serial dilutions were done and was inoculated in Tryptic Soy Agar count, with the results expressed in Log CFU/cm². All trials were conducted in three repetitions in time. The average of the biofilm cells was 5.03 Log CFU/cm². When evaluated the total elimination of the bacterial cells, there was 30.77% survival in both the condition of the MIC as 0.1% of AP. These values will reduce to 20.51% when treated with 0.2% of AP. Results concern are demonstrated in this study since the maximum condition of use recommended by the manufacturer (0,2% AP/10 min) there were surviving cells, showing tolerance of some isolated in the face of the sanitizing action. This can be justified by the ability of ESBL production by isolated, conferring resistance to cross-other chemical compounds, such as sanitizers, necessitating further genotypic researchs these microorganisms resistant.

Keywords: biofilm, enzymes betalactamases expanded spectrum (ESBL), sanitizer