

TITLE: RESISTANCE TO DIFFERENT TRADE MIXED BIOFILMS SANITIZERS
LISTERIA MONOCYTOGENES AND *SALMONELLA* TYPHIMURIUM IN
INDUSTRIAL CONDITIONS

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ABSTRACT:

The action of sanitizers can be influenced by various factors such as the composition of the industrial areas, the type of microorganism present and your adaptability in the face of stressful environmental conditions. In this context, there are conflicts about the effectiveness of different types of sanitizers employees in industries of food about your performance in sessile cells in mixed communities. So the objective of this work was to evaluate the effects of different concentrations of peracetic acid (AP) and polihemametileno of biguanide hydrochloride (CPB) in eliminating mixed biofilms *Listeria monocytogenes* and *Salmonella* Typhimurium. We used three isolates of *L. monocytogenes* and one isolate of *S. Typhimurium*, the same processing surface of pork. The broth TSB-YE with the sterile polypropylene coupons was adjusted in the range 0.5 to MacFarland and incubated to 12°C for 120h. After, the slides were washed in duplicate with 10 ml of PBS. The sessile cells were highlighted by friction with sterile swabs, immersed in tubes containing 10 ml of saline and homogenized in the vortex for 60 seconds. At the same time, coupons were treated with 0.02; 0.1 and 0.2% of AP and 0.05; 1 and 2% of CPB by 10 minutes. In both cases, decimal dilutions, with seeding in Oxford Listeria Agar for *L. monocytogenes* and Xylose Lysine Deoxycholate Agar for *S. Typhimurium*. The results were expressed in Log CFU/cm². All trials were conducted in three repetitions in time. Both microorganisms present ability of biofilm formation in industrial conditions, with the total count of 8.47Log CFU/cm², being composed of 4.62 Log CFU/cm² of *S. Typhimurium* and 3.86 Log CFU/cm² of *L. monocytogenes*. The two sanitizers feature similar reductions in higher concentrations, but no concentration was able to totally eliminate the biofilms formed, resulting in total counts between 0.96 to 3.70 Log CFU/cm² after the treatments. Although *L. monocytogenes* have introduced smaller counts composing the total population of the biofilms, generally presented greater resistance to the sanitizers, with scores that ranged from 0.81 to 1.71 Log CFU/cm² for this pathogen. Thus, the results show concern to food safety, since the resistance of these microorganisms to sanitizers, which favors the persistence of these industrial environments.

Keywords: Industry, *Listeria monocytogenes*, *Salmonella* spp., sanitizers