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SIMPÓSIO BRASILEIRO DE MICROBIOLOGIA APLICADA

# ANAIS

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# Anais

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# EVALUATING THE EFFICACY OF PERACETIC ACID ALONE AND COMBINED WITH OTHER ANTIMICROBIALS AGAINST *Salmonella* ON CHICKEN SKIN

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This study aimed to evaluate the antimicrobial effects of peracetic acid (PAA), PAA + lactic acid (LA), citric acid (CA), phosphoric acid (PA) and sodium bisulfate salt (SBS) on chicken skin artificially contamined with five serovars of *Salmonella enterica* isolated from Brazilian foodborne outbreaks and chicken slaughterhouses (*S*. Typhimurium L12031, *S*. Heidelberg 22295, *S*. Minnesota 7301007, *S*. Enteritidis SE86 and *S*. Saintpaul). The chicken skin samples were obtained from chilled carcasses, acquired from local supermarkets with maximum three days from the manufacturing date. From each carcass (2.0 kg) were removed ~170 g of skin, which were separated in portions of 10 g each and stored inside sterile plastic bags (n = 123). In order to decrease the natural microbial contamination on chicken skins, the samples were treated with UV light at 1.000 μW s/cm$^2$ during 5 min and then rinsed with sterile distilled water during 2 min. After that, the skins were contaminated by aspersion on the surface with *Salmonella* cocktail. The artificially contaminated skins were treated with 0.14% (1400 ppm) PAA alone or combined with 3% LA, 3% CA, 1% PA, and 2% SBS during 0.25, 5 or 30 minutes. All antimicrobials combined caused a reduction greater than 2 $\log_{10}$ CFU/g of *Salmonella*. The highest microbial reduction (2.8 $\log_{10}$ CFU/g) was obtained with the PAA 0.14% + SBS 2% treatment; however, the chicken skin color presented visual changes, which is not recommended in industrial processing. The treatment that showed the greatest microbial reduction (2.0 $\log_{10}$ UFC/g) without visual changes in color was 0.07% PAA in 0.25 min.

**Keywords:** Disinfection; Peracetic acid; *Salmonella enterica*; Antibacterial activity; Chicken skin.

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