

FEMS7-0900
Food Microbiology - Part II

EFFECTIVENESS OF IMMERSION TREATMENTS WITH LACTIC AND ACETIC ACIDS AND MODIFIED ATMOSPHERE PACKAGING AGAINST CAMPYLOBACTER JEJUNI IN POULTRY

*E. Gonzalez-Fandos*¹, *I. Perez-Arnedo*¹

¹*University of La Rioja, Food Technology, Logroño, Spain*

Backgrounds

Raw poultry is a well-recognized source of *Campylobacter jejuni*.

Objectives

The aim of this study was to evaluate the combined effect of a mixture of lactic and acetic acids and packaging in modified atmospheres on the growth of *Campylobacter jejuni* on poultry legs stored at 4°C.

Methods

Fresh chicken legs were inoculated with *Campylobacter jejuni*. After the inoculation, the chicken legs were dipped into a mixture containing 1% lactic acid (v/v) and 1% acetic acid (v/v). Control legs were treated with distilled water. Inoculated samples were packaged under different gas mixtures: vacuum, 20%CO₂/ 80%N₂, 40%CO₂/ 60% N₂ or air.

Conclusions

Significant differences ($p < 0.05$) in mesophiles and psychotrophs counts were found between the legs treated with a mixture of lactic and acetic acid and the control legs after treatment. The lowest mesophiles counts were observed in those samples treated and packaged in 40%CO₂/ 60% N₂. Legs washed with a mixture of 1% lactic acid and 1% acetic acid solution showed a significant ($p < 0.05$) inhibitory effect on *Campylobacter jejuni* compared to control legs, being about 1.35 log units lower in the first ones than in control legs after treatment. No significant reduction on *Campylobacter jejuni* was observed in samples packaged under vacuum, 20%CO₂/ 80%N₂ or 40%CO₂/ 60% N₂.

In conclusion, immersion of chicken legs in a mixture of 1% lactic acid and 1% acetic acid solution can reduce *Campylobacter jejuni* populations on fresh poultry. Atmospheres containing 20%CO₂/ 80%N₂ or 40%CO₂/ 60% N₂ are not able to reduce *Campylobacter jejuni*.