DESCONTAMINATION OF PIG CARCASSES WITH ORGANIC ACIDS

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INTRODUCTION AND OBJETIVES

Campylobacter, Salmonella spp., E. coli, Yersinia and Listeria monocytogenes ar frequently associated with foodborne diseases [1][2].

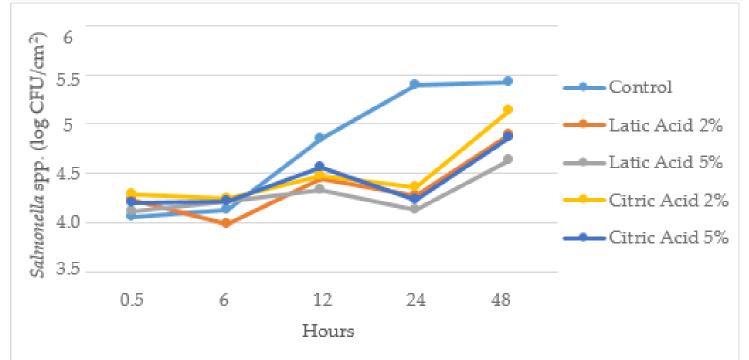
In 2018, according to the frequency of outbreaks published by EFSA, 4.9% of 709 outbreaks were associated with pork meat [1].

The aim of this work was to evaluate the effectiveness of two organic acids substances on the samples of pig carcasses surfaces, previously inoculated with a mix of *Salmonella* Typhimurium ATCC 14028 and *Salmonella* Derby.

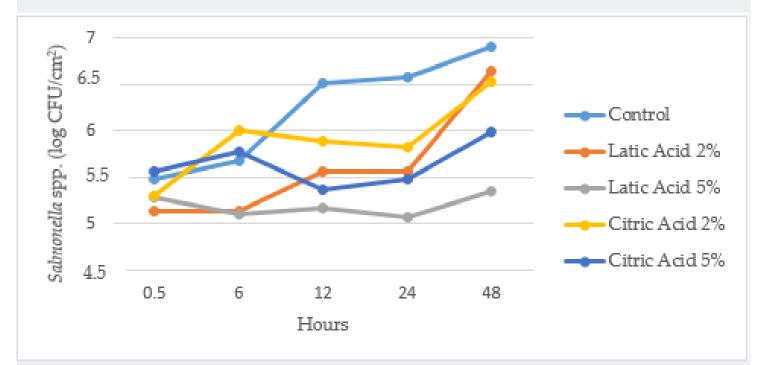
MATERIAL AND METHODS

RESULTS AND DISCUSSION

Figures 1 (suspension A) and 2 (suspension B) represents the evolution of the counts over time.







Mix of Salmonella Typhimurium ATCC 14028 and Salmonella Derby

Two suspensions: $1,42 \times 10^{5} \mu L/cm^{2}$ (suspension A) and $4,92 \times 10^{6} \mu L/cm^{2}$ (suspension B)

Sample 25cm² inoculated with 100µL of bacterial suspension

Decontamination with latic acid or citric acid at 2 and 5%

Storage at 7°C. Analyze at 30 minutes, 6, 12, 24 and 48 hours

REFERENCES

[1] E. Food and S. Authority, "The European Union One Health 2018 Zoonoses Report," EFSA J., vol. 17, no. 12, 2019, doi: 10.2903/j.efsa.2019.5926.

[2] E. Borch and P. Arinder, "Bacteriological safety issues in red meat and ready-to-eat meat products, as well as control measures," Meat Sci., vol. 62, no. 3, pp. 381–390, 2002, doi: 10.1016/S0309-1740(02)00125-0.

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Figure 2. Evolution of *Salmonella* spp. (log CFU/cm²) over storage time, after decontamination with Suspension B.

For both acids, for 2 and 5% lower counts were observed compared with control sample. However, lactic acid 5% was the one with the lowest values, while citric acid 2% was the one in which the difference between its application and the control was smaller.

CONCLUSION

It was possible to observe that lactic acid at 5% achieved better results. It was possible to conclude that both acids, in both concentrations, have a bacteriostatic effect on *Salmonella* spp..







