EVALUATION IN DYNAMICS OF THE RESIDUAL ANTIMICROBIAL EFFECT OF LACTIC AND ACETIC ACIDS ON THE MICROBIAL LOAD AND CONFIGURATION OFF BEEF CARCASSES

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SUMMARY

The aim of this study was to investigate the residual effect of acetic and lactic acid concerning the microbial load and configuration of psychrotrophic germs from the surface of the bovine carcasses. The experiments were made during a period of 13 days, from the moment of sampling, being made determinations in day 0, 1, 5, 9 and 13.

For the sample treated with acetic acid there is a constant tendency of psychrotrophic counts to decrease, reaching the value of 6.30 lg/cm² CFU in day 9, after which, a germ multiplication phase follows, reaching a number of 9.20 lg/cm² CFU in day 13. In the case of lactic acid treated sample a decrease of psychrotrophic counts was recorded at 24 h after application to 7.13 lg/cm² CFU, than a constant increase of the TNG till the value of 10.68 lg CFU/cm² in day 13.

For the acetic acid treated sample, at 24 h from the application bacteria from *Aeromonas* genus weren't isolated anywhere from the sample. Regarding bacteria from *Pseudomonas* genus, their number remained relatively the same for a period of 5 days (6.21 lg/cm² CFU) followed by a quick increase, reaching 8.3 lg/cm² CFU in day 13.

Different to the results obtained with acetic acid, in case of lactic acids treated sample, genus from *Aeromonas* were totally inhibited at 5 days after application, the same as for control sample. The effect of lactic acid on bacteria of *Pseudomonas* and *Yersinia* genera was that of inhibiting their development in the first 24 h, followed by a constant increase in their number, reaching a charge of 10.44 lg CFU/cm². Organic acid solutions determined a decrease of the bacteria number from *Enterobacteriaceae* family until day 5, followed by a constant increase until day 13 of the experiment.

From our study results that regarding psychrotrophic counts, 5 % acetic acid had a residual antimicrobial effect up to 9 days, compared to 5 % lactic acid which had an effect of only 24 h. In dynamics, germs of *Aeromonas* genus were especially sensitive to 5 % acetic acid which totally reduced their number at 24 h after applications. The residual antimicrobial effect of 5 % acetic acid on the germs from *Yersinia* and *Enterobacteriaceae* was obvious up to 5 days compared to 5 % lactic acid which had an effect of only 24 h.

BIBLIOGRAPHY