

Determination of combined effect of commercial organic acids on the microbial quality and shelf-life extension of buffalo meat sausages

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The study was conducted to determine the impact of organic acids on buffalo meat sausages' microbial profile and shelf-life stability. Control, 0.75 % (T1), 1% (T2), and 2% (T3) (v/v) lactic acid and the acetic acid combined solution were prepared and sprayed on buffalo meat sausages. Total viable count (TVC), E. coli count, Pseudomonas count, water activity (aw), pH, and sensory evaluation were studied at 0, 4, 8, and 12 days. The data was analyzed through factorial ANOVA. In T2 and T3, 2.78 and 2.81, log₁₀ CFU/g reduction ($p < 0.05$) in TVC, while 1.38 and 1.46 log₁₀ CFU/g E. coli reduction ($P < 0.05$) was detected at the end of the storage. The significant Pseudomonas count reduction ($p < 0.05$) was observed up to 2.21 and 2.45 Log₁₀ CFU/g in T2 and T3. There was no significant difference ($p > 0.05$) in pH and water activity (aw) between the different trials, but it was statistically different ($p < 0.05$) from the control. The overall acceptability score was higher ($p < 0.05$) in T1 and T2 than in T3. In conclusion, adding a 1% combined lactic acid and acetic acid (T2) significantly affected microbiological and physicochemical properties. The study will help to promote the combined application of organic acids for the shelf-life extension of buffalo beef sausages.