

# Effectiveness of Trisodium Phosphate, Lactic Acid and Acetic Acid on Microbial Count of Chicken Cold Cuts (Chicken Salami and Chicken Roll)

W.T.W. Sajeewani<sup>1</sup>, A.A.G. Chathurangi<sup>2</sup> and D.D. Jayasena<sup>1</sup>

<sup>1</sup>*Department of Animal Science, Uva Wellassa University, Badulla, Sri Lanka*

<sup>2</sup>*Cargills Quality Foods Ltd, Ma Eliya Estate, Ja Ela, Sri Lanka*

Limited shelf life of meat products due to microbial spoilage is a major problem in meat industry as meat is a good source for growth of microorganisms. Therefore, preservation is essential. Thus, the present study was focused to determine the effect of acetic acid, lactic acid and trisodium phosphate on microbial quality of chicken cold cuts (chicken salami and chicken roll). Samples were randomly collected during the chilling step and treated as groups by immersion in lactic acid (2, 3, 4%), acetic acid (2, 2.5, 3%), trisodium phosphate (8, 10, 12%) for 20 seconds. Samples without any treatment served as the control. All treatments were vacuum packed and stored under chilled condition. Treatments were evaluated for colony forming units (CFU), yeast and molds and pH in 10<sup>th</sup>, 20<sup>th</sup>, 30<sup>th</sup> and 40<sup>th</sup> day of storage. Based on CFU counts for chicken salami samples on 40<sup>th</sup> day, acetic acid 2, 2.5, 3% treated samples showed 1.55×10<sup>5</sup> CFU/g, 1.31×10<sup>5</sup> CFU/g, 1.16×10<sup>5</sup> CFU/g, lactic acid 2, 3, 4% treated samples showed 1.56×10<sup>5</sup> CFU/g, 1.43×10<sup>5</sup> CFU/g, 9.60×10<sup>4</sup> CFU/g, trisodium phosphate 8, 10, 12% treated samples showed 1.62×10<sup>5</sup> CFU/g, 1.61×10<sup>5</sup> CFU/g, 1.49×10<sup>5</sup> CFU/g and control sample showed 3.45×10<sup>5</sup> CFU/g while acetic acid 2, 2.5, 3% treated chicken roll samples showed 1.65×10<sup>5</sup> CFU/g, 1.44×10<sup>5</sup> CFU/g, 1.17×10<sup>5</sup> CFU/g, lactic acid 2, 3, 4% treated samples showed 1.58×10<sup>5</sup> CFU/g, 1.43×10<sup>5</sup> CFU/g, 1.01×10<sup>5</sup> CFU/g, trisodium phosphate 8, 10, 12% treated samples showed 1.69×10<sup>5</sup> CFU/g, 1.64×10<sup>5</sup> CFU/g, 1.61×10<sup>5</sup> CFU/g and control sample showed 3.33×10<sup>5</sup> CFU/g respectively. Therefore, CFU counts for both products showed numerical reduction than the control samples and similar trend was observed in yeast and mold on 40<sup>th</sup> day of storage. During storage, the pH of samples treated with acid were declined and the pH of samples treated with base were increased. Hence, the acetic acid, lactic acid and trisodium phosphate treatments have a potential to reduce the microbial count in chicken cold cuts.

**Keywords:** Chicken roll, Chicken salami, Microbial quality