Prevalence of *Escherichia coli*, *Salmonella* serovars and *Staphylococcus aureus* in retail chicken from Badulla District, Sri Lanka

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ABSTRACT

Food safety is a global challenge for most developing countries. Food borne diseases are mainly caused by *E.coli*, *Salmonella* and *S. aureus*. And foods originated from animal are more susceptible for spoiling. Thus, the present study aimed at evaluating the *Escherichia coli*, *Salmonella serovars* and *Staphylococcus aureus* contamination in retail chicken meat from Badulla district to analyze the microbiological quality of the retail chicken meat in Badulla District.

Twenty retail shops were randomly selected from seven secretary divisions in Badulla district. Two whole chicken samples were collected from each retail shop and transferred to the laboratory under refrigerated condition. 25 g of chicken meat samples from different cuts (breast, back, thigh, wings and whole) were taken. Each meat sample was pre enriched with 225 ml of buffered peptone water and placed in incubator at 37 °C for 24 hours. Loops full of pre enriched samples were streaked on Eosin Methylene Blue agar, Brilliant Green agar and Manitol Salt agar to isolate of *E.coli*, *Salmonella and S.aureus* respectively. Inoculated plates were incubated at 37 °C for 24 hours. Presumptive colonies on each agar plate, sub cultured on nutrient agar plates and incubated at 37 °C for another 24 hours. Presumptively positive colonies of *E.coli, Salmonella* on nutrient agar plates were bio-chemically confirmed with Simmons Citrate agar and *S.aureus* by catalase test.

Prevalence of *Salmonella* in thigh, breast, back and wing cuts were 28.92 %, 20.48 %, 19.28% and 13.25 % respectively. Prevalence of *Salmonella* in whole chicken sample was 18.07%. No significance association was observed for the prevalence of *Salmonella* with different chicken meat cuts ($P > 0.05$). Prevalence of *Escherichia coli* in thigh, breast, back and wing cuts were 18.99%, 26.58%, 26.58% and 11.39% respectively. Prevalence of *Escherichia coli* in whole chicken sample was 16.46%. There was a significance association between chicken part and the prevalence of *Escherichia coli* in retail chicken meat in Badulla District. Contamination rates of *S .aureus* in different cuts of retail chicken meat were thigh (20.99%), breast (25.93%), back (24.69%) and wing (11.11%). A significant association was observed in prevalence of *S. aureus* in different cuts of chicken carcass taken from the retail outlets of Badulla district ($P<0.05$). The highest occurrence of *Salmonella* was reported in Badulla division

(19.28%). Incidences of *Escherichia coli* (24.05%) and *S. aureus* (18.52%) were significantly high in Bandarawela division. The findings of this study are vital to the public health risk of the country and emphasis the need of developed programme to assure the quality and safety of poultry meat at retail market

Key words: *Salmonella*, *S. aureus*, *E. coli*, Chicken, retail market