

Microbiological Evaluation of Broiler Carcasses, Wash and Rinse Water from Pluck Shops (Cottage Poultry Processors) in the County Nariva/Mayaro, Trinidad, Trinidad and Tobago, West Indies

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Summary

A study on the prevalence and levels of Campylobacter, Salmonella and E. coli on broiler chicken carcasses, wash and rinse water from pluck shops/cottage poultry processors (CPP) in county Nariva Mayaro Trinidad was done. There are 21 pluck shops/cottage poultry processors in the county, 14 pluck shops were randomly selected for the study. Samples consisted of 28 broiler carcasses, 14 wash water samples and 14 rinse water samples. Over all the isolation rate of Campylobacter, Salmonella and E. coli from broiler carcasses wash and rinse water showed significant differences ($P < 0.05$) between pluck shops. Of the 56 samples examined from the 14 pluck shops sampled, 34 (60.7%) were positive for Campylobacter, 34 (60.7%) for Salmonella and 40 (71.4%) for E. coli. The correlation between the levels of Campylobacter found on carcasses and in wash water ($r^2 = 0.657$) and rinse water ($r^2 = 0.600$) was significant ($P < 0.05$) among pluck shops/CPP. There was also a high correlation ($P < 0.05$) between wash and rinse water samples ($r^2 = 0.950$) for Campylobacter. Salmonella levels on carcasses and in wash water were positively ($P < 0.05$) correlated ($r^2 = 0.947$). Of the 14 pluck shops examined 6 (42.9%) had Campylobacter levels that corresponded to infectious dose in humans. The infectious doses for Salmonella were isolated from 3 (21.4%) pluck shops and 13 (92.9%) pluck shops evaluated had E. coli present at potentially infectious levels. Three pluck shops/CPP (21.4%) had infectious dose for Campylobacter, Salmonella and E. coli where as all others had infectious levels for one or two pathogens. It was concluded that these pathogens are present in pluck shops/CPP in the county, having levels considered to be potentially infectious to humans and as such there should be health concern.

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