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A preliminary microbiological study of chicken-based short-eat food in Kadawatha, Sri Lanka

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Foodborne disease outbreaks caused by microbiological hazards are a growing public health concern in all around the world. It results in a significant number of deaths and hospitalizations in each year. According to the '*Weekly Epidemiological Report: A publication of the Epidemiology Unit*' of Ministry of Health (2013: Vol. 40, No. 49), fast short-eat food are identified as a prominent source of foodborne illnesses as they do not undergo any effective treatment to ensure food safety prior to consumption. Therefore, the present study was conducted to determine the microbiological quality and safety of fast food sold in highly urbanized Kadawatha city, Sri Lanka.

A total of six chicken based short-eat food products obtained from recognized restaurants at Kadawatha city were analyzed for Total viable count (TVC), Total coliform count (TCC), *Escherichia coli* count (ECC), *Staphylococcus aureus* count (SAC) and for the presence of *Salmonella* according to Sri Lanka Standards (SLS:516). The noncompliance of the food samples were determined according to the local microbiological guidelines for fast food by Sri Lankan Standards Institution (SLS:1218).

Food, including burger, club sandwich, bread roll sandwich and rotty exceeded the proposed guideline (5 log CFU/g) for TVC and club sandwich found to bear the highest TVC of 7.51 log CFU/g, whereas hotdog with mustard cream had the lowest of 3.05 log CFU/g. All food, except from hotdog with mustard cream were detected TCC exceeding 10 MPN/g indicating cross contaminations by poorly sanitized food contact surfaces, poor quality ingredients and improper waste discard policies. *E. coli* were present only in burger (4 MPN/g), bread roll sandwich (4 MPN/g) and club sandwich (9 MPN/g) signifying the degree of ignorance from the food handlers for maintaining personal hygiene during food preparation. Further, the statistical analysis of the samples denotes a significant ($P < 0.05$) correlation between TVC, TCC and ECC. *S. aureus* was detected in four food samples where the highest SAC of 4.48 log CFU/g found to be in rotty. This may be attributed to extensive handling and temperature abuse during storage. However, *Salmonella* was not detected in any of the analyzed food.

The present study demonstrates that the fast short-eat food implies a potential public health hazard and more importantly, the susceptible population is at a higher risk. Given the higher demand for these foods, it stresses the immediate attention of local authority in the area to emphasize on educating food vendors on the importance of adhering to strict food safety regulations and Food Safety Management Systems (FSMS) to ensure that the standard of the food is best achieved from farm to folk.

Keywords: Fast short-eat food, Food safety, Microbiological hazard