A survey of microbial quality of fast-foods in Colombo area

By

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Thesis is submitted to the University of Kelaniya, in partial fulfillment of the requirement for the Master of Science degree (Applied Microbiology)

August, 2003
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Abstract

Fast-foods have become very popular among the urban communities of Sri Lanka due to their busy lifestyle. Most types of fast-foods are not thoroughly cooked as the traditional preparations and this can lead to the spread of food-borne diseases. The microbiological quality of fast-foods has not been previously studied in Sri Lanka.

The objective of the present study is to assess the microbiological quality of fast-food items containing meats, and compare with the Sri Lanka Standard for such items.

A total of 63 samples were examined over a one year period for the presence of indicators of faecal contamination of fast-foods (Coliforms and E.coli) and specific pathogens Salmonella, Staphylococcus aureus and E.coli O157: H7.

Beef, chicken and pork preparations from fast-food restaurants in Colombo city and other areas were obtained. Standard methods specified by the Sri Lanka Standards were used in detecting indicators of faecal contamination Salmonella and Staphylococcus aureus except E.coli O157:H7. Sorbitol MacConkey Agar was used as the selective medium for isolation of E.coli O157:H7. The isolates were subjected to biochemical tests and the suspicious colonies were confirmed by the serology. For confirmation of pathogenic Staphylococcus aureus rabbit plasma serum was used. E.coli O157:H7 was confirmed using latex agglutination test.

Among 17 beef samples, 07 (18.7%) samples were positive for Salmonella. Among 25 chicken samples 09 (36%) samples were positive for Salmonella. In pork 11 samples 03 (27.3%) were positive for Salmonella.
Among 27 beef samples, 06 (18.7%) samples were positive for *Staphylococcus aureus*. Among 25 chicken samples 05 (20%) samples were positive for *Staphylococcus aureus*. In 11 pork samples 04 (37.4%) samples were positive for *Staphylococcus aureus*.

Among 27 beef samples 02 (7.4%) samples were positive for *E.coli O157:H7*. *E.coli O157:H7* was absent in other samples.

Restaurant wise, class 1 restaurant was found to have 10% of *Salmonella*, 15% for *Staphylococcus aureus* and absent for *E.coli O157:H7*.

In class 2 restaurants, 22.72% of *Salmonella* and 18.18% of *Staphylococcus aureus* were present, and *E.coli O157:H7* was absent.

In class 3 restaurants, 42.85% of *Salmonella* and 33.33% of *Staphylococcus aureus* were present, and *E.coli O157:H7* was present in beef samples.

The above results indicate that *E.coli O157:H7* mainly exist in beef products. Pork samples were found to be having a high percentage of positive for *Staphylococcus aureus*. Chicken samples had a high percentage for *Salmonella*.

The results indicate that most samples of fast-food subjected to microbiological examination in the present study did not conform to the Sri Lanka Standards for cooked meat products.