

## **Detection of staphylococcal enterotoxins in milk and meat in Nairobi Kenya using Enzymes Linked Immunosorbent Assay**

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### **Abstract:**

*Staphylococcus aureus* is a cause of food poisoning in humans characterized by vomiting, headache, abdominal pain, and diarrhoea that occur 1-6 hours following consumption of contaminated food. This study was carried to determine the rate of contamination of milk and meat products with enterotoxigenic *S. aureus* in Nairobi. Analysis was done at the Department of Public Health, Pharmacology and Toxicology, University of Nairobi. A total of 400 milk and meat products were collected around Nairobi. The samples included 200 raw milk, 100 beef carcass swabs, 50 minced meat samples and 50 chicken carcasses. Mannitol salt agar was used as selective and indicator medium for isolation of *S. aureus* from food samples. *Staphylococcus* was identified using a number of different diagnostic tests, which included oxidative fermentation, Mannitol fermentation, coagulase production and deoxyribonuclease (Dnase) production assays. Enterotoxin production was detected using Enzyme linked immunosorbent assay (ELISA) using *Staphylococcus* Enterotoxin Enzyme Immunoassay (SET-EIA) kit. One hundred and one (101) *S. aureus* were isolated from food samples. Of these, 22 were from chicken, 16 from minced meat, 55 from raw milk and 8 from beef carcasses. Sixty-seven of *S. aureus* were found to be enterotoxigenic. Staphylococcal enterotoxins SEA, SEB, SEC and SED were tested for, and SEC was the most frequent accounting for 59 (88%). Twenty-four (38.5%) of the enterotoxigenic *S. aureus* produced single enterotoxins. Chicken carcasses accounted for the highest percentage (44%) of enterotoxigenic *S. aureus* in foodstuff with SEC producing strains having the highest percentage.