

Microbial and Physicochemical Screening of Ready to Eat Street Foods

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ABSTRACT

Food samples (African salad, fried yam, fried potato, fried plantain, fish and meat) were collected in three locations along Oshodi, Alimosho and Kosofe areas and analysed for their microbial load. Analysis of the food samples revealed Total viable count ranging from 1.0×10^5 cfu/g to 5.2×10^6 cfu/g, Coliform count, 2.4×10^5 cfu/g to 3.2×10^6 cfu/g, Staphy. 2.0×10^5 cfu/g to 3.4×10^6 cfu/g, Pseudomonas 3.4×10^5 cfu/g to 3.4×10^6 cfu/g, Shigella 2.0×10^5 cfu/g to 3.2×10^6 cfu/g, E. coli 1.0×10^5 cfu/g to 4.0×10^6 cfu/g to 5.2×10^6 cfu/g. These count from the various locations. The organisms isolated includes, *Staphylococcus aureus* (27%), *Escherichia coli* (27%), *Pseudomonas* (27%), *Streptococcus* (27%), *Bacillus cereus* (27%) and *Salmonella* sp (0%). The TVC count in these food samples exceeds the standard set by International Commission for Microbiology Specifications for Food (ICMSP) for ready-to-eat food which states that TVC count between 5×10^5 cfu/g is acceptable, 10^6 to 10^7 cfu/g is acceptable and 1×10^8 cfu/g is unacceptable. Therefore, these foods are not microbiologically fit for consumption. The occurrence of these harmful bacteria in the foods constitutes public health risk to consumers as these pathogens have been associated with foodborne infections. Therefore, government should enforce strong food safety regulations for street food vendors. In addition, street food vendors need to be educated on food safety and hygiene practices.

Keywords: Ready-to-eat foods, Foodborne pathogens, Microbiological quality, Food safety

1. Introduction

Street foods are "ready-to-eat" foods and beverages prepared and sold by vendors and hawkers especially in the street and other similar public places. Street foods are an extremely heterogeneous food category encompassing meals, drinks and snacks. They also show great variation in terms of ingredients, methods of retail, processing and consumption and are sold on the streets from pushcarts or basket or balance poles or from stalls or shops having fewer than four permanent walls (FAO, 1997).

Nigeria had an history of developed supermarket industry until social and economic changes in early 1980s diminished the country's middle class significantly, since then most Nigerians shop at traditional open air markets or purchase their goods from traders and street vendors (Nwaka, 2011). Extensive street-vending of foods in Nigeria as in most other cities arises from multiple causes; deterioration of rural living conditions, migration to the cities and accelerated urbanization leading to enormous urban congestion, long commuting distance between workplace and home, unemployment, lack of cooking skills, changes in family cohesion and shortage or absence of establishment that serves reasonable priced food close to the workplace (Tinker, 1997; Maxwell, 2000). Street-vended food provides a major source of income for vast number of persons particularly women; a chance of self-employment and opportunity to develop business skills with low capital investment, least expensive and most accessible means of obtaining a nutritionally balanced meal outside the home for many low-income earners.

Despite the economic and nutritional benefits of street foods, the consumption of these roadside foods has been suggested to potentially increase the risk of foodborne diseases as street foods are readily contaminated from different sources (Tambekar et al, 2006). In fact street foods have often been associated with traveller's diarrhea and other foodborne diseases. Many studies have revealed the frequent contamination of street foods in many

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