Incidence of Listeria monocytogenes in Ready-To-Eat Food Sold in Johannesburg, South Africa

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Abstract: Listeria monocytogenes is one of the most important foodborne pathogens associated with ready-to-eat (RTE) food. This study investigated the incidence of Listeria monocytogenes in 80 RTE food sold in the formal (dairy and processed meat) and informal markets (vegetable salads, beef stew, and rice) of Johannesburg, South Africa. High Enterobacteriaceae, S. aureus, and E. coli counts were obtained, which ranged from 1.9-7.5 log CFU/g. Listeria monocytogenes microbial counts in the food samples ranged from 3.5-6.0 log colony forming unit per gram except in cooked rice. The Listeria monocytogenes isolates were identified using biochemical tests and confirmed with the Biolog identification system and PCR analyses. The percentage incidence for Listeria monocytogenes in ready to eat food was 12.5%. When Minimum Inhibitory Concentrations were under consideration, all disinfectants were effective against Listeria monocytogenes strains. For antimicrobial work, rates of resistance amongst the antibiotics ranged from 17-100%. Therefore, more effective preventive control strategies for Listeria monocytogenes are needed to reduce the prevalence of the pathogen in RTE food that is sold in Johannesburg.

Keywords: Listeria monocytogenes, Listeria species, ready to eat food, sanitiser efficacy

Conference Title: ICFSCTC 2019: International Conference on Food Safety, Contamination and Toxic Components

Conference Location: New York, United States

Conference Dates: December 09-10, 2019