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BACTERIOLOGICAL SAFETY OF SUYA, A READY-TO-EAT BEEF PRODUCT, AND ITS ASSOCIATION WITH ANTIBIOTIC-RESISTANT PATHOGENS IN NIGERIA

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ABSTRACT

The rapid development antibiotic-resistant food pathogens pose a heightened threat to public health. This study investigated the antibiotic resistance pattern of bacteria associated with suya meat, a ready-to-eat beef product, in Nigeria. Three hundred suya meat samples were cultured and pure isolates identified by API 20E and API 20NE. The resistance profile of isolates was determined using disc diffusion methods. Data were analysed by one-way analysis of variance and students' T-tests. The mean total plate counts (TPCs) of samples ranged from 1.0 x 10^5 to 3.7 x 10^5 CFU/g. There were no significant differences among the TPCs from zones A, B, C and D ($P>$ 0.05). A total of 1014 isolates were obtained with *Pseudomonas aeruginosa* (13.51%) having the highest percentage occurrence and *Salmonella enteric* Typhimurium (1.48%), the lowest. A 92.90% portion of the isolates showed sensitivity to imipenem while 86.69% exhibited resistance to teicoplanin. This study revealed that the microbial quality of the ready-to-eat suya was at a borderline with reference to the microbiological guidelines for ready-to-eat animal food product. The study also revealed the presence of antibiotic-resistant bacteria in the ready-to-eat beef product which indicates a risk in food safety and a threat to public health. These findings will aid in the selection process of the right antibiotics in the treatment of food-borne infections while establishing the need for improvement on the microbial quality of the food product.