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Bacteria Contamination of Poultry Meat Processed by Smallholder Poultry Farmers

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Abstract

Poultry birds are raised for the production of quality protein as meat or eggs for human consumption. Meat from table birds for human consumption can be contaminated with bacteria during slaughter and along the processing chain. *Salmonella*, *Escherichia Coli*, *Campylobacter Jejuni* are some bacteria which causes economic losses in the poultry industries and are also very dangerous to consumers health. In low medium income countries like Nigeria, poultry meat from smallholder farmers are processed manually in small scale. This method makes poultry meat readily available for low-income households that cannot afford, imported well packaged poultry meat. This study was designed to assess contamination of poultry meat processed by smallholder poultry farmers. Poultry meat samples such as head and thigh (drum stick and thigh) were purchased from vendors for smallholder poultry farms. Samples were chopped to fine particle using a sterile knife and 1gram weighed on an electrical weighing balance then transferred into 9 ml of normal saline solution to make 10 ml of stock solution. Serial dilution was performed and the third diluent was plated out on nutrient agar, incubated at 37°C for 24 hours. Colonies were picked at random according to their varying cultural characteristics, sub-cultured by streak method on fresh nutrient agar plates and incubated at 37°C for 24 hours to obtain pure isolates. Biochemical tests, gram staining technique and bacterial motility tests were carried out to identify bacterial isolates. All analysis were carried out in triplicates. Nine bacteria were identified on both meat samples which were obtained as pure culture. *Staphylococcus* (21 %), *Pseudomonas* (17 %), *Bacillus* (13 %), *Escherichia. coli* (13 %), *Micrococcus* (12 %), *Salmonella* spp (8 %), *Protus* (8 %), *Shigella* (4 %), *Klebsiella* (4 %); respectively.

Poultry meat processed by smallholder poultry farms are contaminated with a wide range of bacteria besides *Salmonella* spp and *E. coli*.

Keywords: smallholder poultry farm, bacteria contamination, poultry meat, processing