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Bacterial contamination of poultry feed in delta metropolis in Nigeria

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Statement of the Problem: Material of poultry feed may be inoculated with pathogens during growing, harvesting, processing and storage of feed. The safety and quality of poultry feeds is of great important in developed countries, because feed safety is an essential requirement for all animals. Unsafe feed may transmit microbial agents to poultry farms, causing poultry diseases that will lead to destruction of an infected flock of birds often causing great economic losses. This study was carried out to evaluate feed safety of poultry feeds sold within delta metropolis.

Materials & Methodology: A total of 15 feed samples were collected from different feed types (broilers, layers and chicks feed) and sources (feeds from factories, feeds inside poultry farms and market feeds). Samples were cultured in nutrient agar, MacConkey agar, Cystine-lactose- electrolyte- deficient (CLED) agar and *Salmonella – Shigella* agar (SSA).

Results: The contaminants isolated *included Salmonella spp., Escherichia coli, Proteus* spp., *Streptococcus* spp., *Bacillus* spp., *Staphylococcus* spp., *Klebsiella* spp. The occurrence of *E. coli* was higher than other bacteria isolated at 15 (23%), followed by Salmonella spp. 10 (15.4%), *Streptococcus* spp. 10 (15.4%) , *Bacillus* spp. 9 (13.8%), Proteus spp. 8 (12.3%), *Staphylococcus* spp. 8 (12.3%) and *Klebsiella* spp. 5 (7.7%). The total viable counts were found in the range of $5.5x10^6$ to $7.3x10^6$ cfu per ml from market feed, $5.0 x10^4$ to $7.4x10^5$ cfu per ml from poultry farm and $5.0x10^5$ and $6.0x10^4$ cfu per ml from feed factory respectively. Bacteria isolates from broilers feed was lower at 11 (27.5%), 12(30%) from chicks feed and 17(42.5%) from layers feed respectively.

Conclusions: Our findings have shown a relatively high level of bacterial contamination of poultry feed in the studied area.

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