

ANTIMICROBIAL-RESISTANCE PROFILING OF PATHOGENIC BACTERIA ISOLATED FROM CHICKEN MEAT

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Executive Summary

Foodborne zoonotic pathogens posed in meat and meat products has recently become the serious public health concerns. Many previous studies reported that meat and meat products are the important sources of food poisoning in human beings when contaminated with those bacterial pathogens could have the serious public health impact due to poses of the pathogenic bacteria for the communities. Therefore, this study was conducted to evaluate the pathogenic bacterial contamination of chicken meat samples in the Dhaka city. A total of 40 (n=40) chicken meat samples were collected from broiler and layer meat in different markets in Dhaka city to determine bacterial contamination. In results, a significant difference was found in bacterial loads between broiler and layer chicken meat. Broiler meat samples exhibited a lower mean Total Bacterial Count (TBC) of 8.22 ± 2.48 log Colony Forming Units (CFU)/ml compared to the higher mean TBC of 12.07 ± 2.68 log CFU/ml found in layer meat samples. The prevalence of *Staphylococcus aureus*, *Escherichia coli*, *Klebsiella* spp., and *Salmonella* spp. was 70.0%, 52.5%, 20.0%, and 12.5%, respectively. Moreover, *E. coli* (55% and 50%, respectively) and *Staphylococcus aureus* (80% and 60%, respectively) were prevalent in both broiler and layer meat, with significant *Salmonella* spp. contamination only in layer meat. *Klebsiella* spp. was more common in broiler meat (30%) than layer meat (10%). Significant resistance to azithromycin and erythromycin was found, however broiler meat notably demonstrated increased susceptibility to antibiotics such as gentamicin and ciprofloxacin. Overall, the results demonstrated in this study showed how crucial the good hygiene and proper uses of antimicrobial drug are in poultry production.

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