

**EXISTING POULTRY WASTE MANAGEMENT PRACTICES AND  
ASSESSMENT OF ITS NUTRIENT CONTENT AND HAZARDOUS  
SUBSTANCES IN SOME SELECTED POULTRY  
FARMS IN GAZIPUR DISTRICT**

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**Executive Summary**

Poultry waste management is a big challenge for low income economies. Therefore, the objective of this study was to assess the current trends of poultry waste management practices and also to know the nutrient content as well as heavy metals in poultry litter. The questionnaire survey using randomly selected poultry farms (n= 100) was administered in the five upazilas of Gazipur district from October 2022 to April 2023; followed by several field visits. Fifteen broiler poultry litter and fifteen layer poultry litter samples were analyzed for dry matter, nitrogen (N), phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg), sodium (Na), sulfur (S) and some heavy metals such as lead (Pb), cadmium (Cd), chromium (Cr). It was found that 88% farms used rice husk and 11% used wood shaving as bedding materials. Among the surveyed farms, 48% dispose litter in pit, 43% on open place. Most of the investigated layer farms used litter as fish feed (89%). No one of the respondents treated the waste before disposal. Majority of the respondents (60%) said that complaint by the neighbours living around the poultry farms was the odour. On the issue of environmental pollution (water, soil and air pollution) due to poultry litter, most of the respondents' (88%) perception was negative (cause environment pollution). It was also observed that 85%, 95% and 45% of the respondents were aware of surface water contamination, air pollution and soil contamination, respectively by the improper disposal of poultry farm waste. The major technical and socio-economical constraints are the lack of manure treatment capacity (51%) and unavailability of credits (48%). About 86% of the respondent farmers stated that they were unaware of improved manure management and 42% raised the problem of lacking trading infrastructure. The laboratory analysis showed that dry matter content were 79% and 58%, respectively for broiler and layer manure. The average concentration of total N were 1.5%, 1.6%; Phosphorus were 3.4%, 2.3% and Potassium were 1.4%, 1.3% in broiler and layer poultry litter respectively. The observed levels of heavy metals were BDL,  $34.775 \pm 0.004$  mg/kg for Pb;  $0.370 \pm 0.002$ ,  $0.329 \pm 0.002$  mg/kg for Cr,  $0.082 \pm 0.002$ ,  $0.763 \pm 0.003$  mg/kg for Cd, in broiler and layer poultry litter respectively. It can be concluded from the study that the limited knowledge on proper management of poultry wastes in the study area as well as lack of enforcement of legislation predisposes the environment pollution risks. Therefore, the result of this study will assist in formulating appropriate strategies and to adopt poultry waste management solutions by poultry farmers to reduce environmental degradation.

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