

**ENVIRONMENTAL HAZARDS IN PERI-URBAN POULTRY FARMING IN
WESTERN KENYA**

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ABSTRACT

Poultry keeping is popular in peri-urban centres of Kenya. Poultry wastes arising from intensive poultry units may become too large to be absorbed in the immediate areas of production as crop plots and gardens decrease in size in urban centres leading to potential for environmental hazards. This study was conducted in four urban centres of Bungoma, Eldoret, Kakamega and Kisumu to evaluate the contribution of poultry wastes to environmental hazards. Manure samples were collected from 40 randomly selected intensive poultry farms and taken to the Kenya Bureau of Standards laboratory for microbial and heavy metal content analysis. There was no significant variation in *E.coli* levels between the four municipalities (p-value > 0.353) as well as between the poultry manure types (p-value > 0.823). There was a statistically significant interaction between manure condition and municipalities and the *Salmonella* levels, $F(2, 33) = 6.266, p < 0.005$. There was lack of evidence to dispute the claim that the means concentration (mg kg^{-1}) of mercury [$F(3, 33) = 1.035, p < 0.390$] as well as copper [$F(3, 35) = 0.084, p > 0.968$] in poultry manures was similar across the four municipalities. This means that the heavy metal contents in the manure in the study area was below levels that could be considered hazardous in the manure if handled as waste. Strict hygiene and bio-security was recommended. It was recommended that Bio-security and hygiene should be included in the poultry extension programmes and training curricula.

Keywords: Environment, Hazards, Poultry, Peri-Urban, Kenya.