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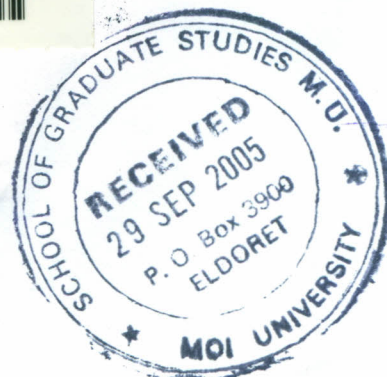
**ASSESSMENT OF HEAVY METALS IN MEAT CONSUMED IN
ELDORET TOWN AND THEIR HEALTH IMPLICATIONS ON
CONSUMERS**

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ABSTRACT

Widespread contamination of water, air and soils by chemicals and industrial pollutants means that the crops we grow and the animals we use as food are often exposed to toxic substances. A single source of contamination can affect food consumed by large numbers of people, and contaminated food can have a serious effect on human health. The main objective of this study was to assess the levels of selected heavy metals Lead (Pb) and Cadmium (Cd) in meat consumed in Eldoret town and therefore indicate the extent of human exposure. This study mainly focused on liver and kidney of bovine. These organs were chosen because they are known to accumulate heavy metals; therefore, the results of their examination for heavy metals can provide information of the contamination of products of the animal concerned. Samples used in this study were collected from Eldoret municipality slaughterhouse by random sampling method. In total, 202 liver and kidney samples were collected, dried and ground. Concentrations of Pb and Cd were analyzed, after wet digestion in concentrated nitric acid and hydrogen peroxide by flame atomic absorption spectrometer (AAS- Varian 200). In liver samples, mean Pb concentration was 0.16 mg/kg, mean cadmium level was 0.021 mg/kg and in kidney samples, the mean value of Pb and Cd were 0.11mg/kg and 0.031 mg/kg, respectively. All samples analyzed for Pb and Cd levels gave values above the detection limits, 0.01mg/kg and 0.001 mg/kg, respectively. According to the results obtained for liver and kidney, it was established that levels of Cd in kidney were higher than in the liver whilst levels of Pb were higher in the liver than in the kidney. Moreover, cumulative Pb levels in the samples were higher than they were for Cd. However, the levels of heavy metals obtained from this study were far below maximum levels set by WHO/FAO (Liver = 2.0 mg/kg Pb and Kidney = 1.0 mg/kg Pb; Liver = 0.5 mg/kg Cd and Kidney = 1.0 mg/kg Cd). This is so far a positive result probably due to the animal's homeostasis ability to balance body minerals. Considering the relatively low concentrations of the metals studied, it can be concluded that consumers of meat in Eldoret town are relatively not exposed to high levels of heavy metals, Pb and Cd. However, there is need to educate the public and continuous monitoring studies to ensure that the meat consumed in Eldoret remains free from heavy metals.