



Toxicological evaluation of chicken-livers ingested around Mafikeng metropolitan city, South Africa

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1 ABSTRACT

This study evaluates the health risk associated with consumption of chicken livers contaminated by heavy metals. One hundred and thirty five (135) packaging bags filled of chicken-livers, each bag weighing 0.5 kg were obtained from three supermarket shops around Mafikeng local government municipality and were transported to the laboratory for analysis. Forty five (45) packaging bags filled of chicken-livers with each bag weighing 0.5 kg were obtained from shops SRL3, SPL1 and FVL2 respectively at different periods of the year (2016). They were analysed for macro-metals, trace metals, and human carcinogens using Inductively coupled plasma mass spectrometry (ICP-MS). The evaluated concentrations of these metals were then used to calculate the health risk for adults and children. The hazard index (HI) values obtained for all the age groups were above one making the non-carcinogenic effects significant. Hence, the exposure may pose serious non-carcinogenic effect to the population living around Mafikeng metropolis. The average value of the carcinogenic risk due to Chromium (Cr) for all the age groups and the three shops was found to be 9.99×10^{-4} implying that 1 persons in every 1000 would be affected.
