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### Presence and distribution of heavy metal in raw food samples from open markets from Johannesburg, South Africa and Kinshasa, Democratic Republic of Congo

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Heavy metals in food are still a concern especially in developing countries where legislation is not fully implemented. Thus, this study assessed the distribution and levels of heavy metal in raw food sold in the open markets in Kinshasa (Democratic Republic of Congo) and Johannesburg (South Africa). 120 food samples were purchased in the markets in both Kinshasa and Johannesburg. The various food samples constituted of cabbage, beans, beef and fish (tilapia). Ten trace metals: Al, As, Cd, Cr, Cu, Hg, Mn, Pb, Se and Zn were analyzed in the raw food. The study results revealed that the food collected in the Johannesburg market contained a higher level of As, Cd, Cr, Cu, Hg, Mn, Pb, Se and Zn than the food samples collected in the Kinshasa market. The food from the Kinshasa market, however, contained a higher level of Al than that from the Johannesburg market. Vegetables were found to contain the highest metal values especially cabbage samples from Johannesburg ( $75.12 \pm 5.67$ ,  $18.31 \pm 3.45$ ,  $17.29 \pm 2.03$ ,  $15.70 \pm 1.67$ ,  $4.14 \pm 1.08$ ,  $3.93 \pm 0.12$  and  $1.41 \pm 0.97$  mg/kg for Zn, Mn, Cr, Cu, Pb, Cd and Se, respectively), and from Kinshasa ( $52.15 \pm 3.45$  mg/kg for Al). While, fish from Johannesburg showed the highest As and Hg content of  $12.04 \pm 2.23$  and  $0.86 \pm 0.1$  mg/kg, respectively. The obtained results showed that the concentrations of most studied metals were exceeding the recommended maximum acceptable levels proposed by the Joint FAO/WHO Expert Committee on Food. Thus caution should be exercised especially for those who depend on it on a daily basis.

#### Biography

Yannick Belo Nuapia is a Congolese Toxicologist. After completing his graduation as Pharmacist at the Faculty of Pharmacy of the University of Kinshasa in 2010, he moved to South Africa and obtained Master's degree in Environmental Analytical Chemistry at the University of the Witwatersrand. Since, 2011, he is working as junior Lecture at University of Kinshasa, Faculty of Pharmacy.

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