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Assessment of organochlorine pesticide residues in raw food samples from open markets in two African cities

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The present research study investigated the level of organochlorine pesticides in the raw food from open markets in Kinshasa, Democratic Republic of Congo (DRC) and Johannesburg, South Africa. The study assessed the potential health risks associated with the organochlorine pesticide residues. Quick, Easy, Cheap, Effective, Rugged and Safe (QuEChERS) method has been developed as sample preparation technique. A total of 120 food samples were obtained from open markets (beans, cabbage, beef and fish). The mean concentrations of organochlorine pesticides in raw foods collected in Johannesburg market were significantly higher ($p < 0.05$) than those from market in Kinshasa. DDE recorded the highest mean concentration ($253.58 \pm 4.78 \mu\text{g kg}^{-1}$) in beef collected in Johannesburg. The lowest mean level of organochlorine pesticides was for α -BHC ($38.54 \pm 7.46 \mu\text{g kg}^{-1}$) in beans from Kinshasa. The investigation of health risk estimates revealed that number of the organochlorine pesticides exceeded the reference dose in the food samples.

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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