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The incidence of some heavy metals in grasscutter meat (*Thryonomys Swinderianus* Temminck) in Edo state, Nigeria

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The concentrations of heavy metals (Lead, Chromium, Cadmium, Arsenic and Nickel) in fresh and smoke-dried grass cutter meats were determined in this study. Muscle, liver and kidney of wild and domesticated grass cutters were purchased from Uwa, New Benin, Arbico markets and Makarios graduate grass cutter farmers Edo Development and Property Authority Housing Estate respectively, in Benin City, Edo State, Nigeria. Twenty-four (24) samples were used in all. Atomic Absorption Spectrophotometer (AAS) was used for analysis after wet digestion of samples with 1:3 Perchloric acid and Nitric acid. Data obtained were statistically analyzed using SAS. Randomized complete block design was used and treatments were accommodated in a 4x3x2 factorial arrangement. The ranges obtained for the heavy metals analyzed in (fresh and smoke-dried) muscle, liver and kidney samples were observed as follows; Pb(ND-0.513 ppm) (ND-0.154 ppm), Cr(0.072-1.186 ppm) (0.074-0.306 ppm), Cd(0.186-7.516 ppm) (0.277-2.723 ppm) and Ni(0.041-0.725 ppm) (0.045-0.188 ppm) respectively. Generally, the heavy metal concentrations were significantly higher ($P<0.05$) in the fresh and smoke-dried muscle, liver and kidney of wild grass cutters than the values from domesticated grass cutters. Fresh grass cutter samples were, however, significantly higher ($P<0.05$) in these heavy metals than in smoke-dried grass cutter samples. The concentration of Cr, Cd and Ni reveals values higher than the recommended limits of (1.0 mg/kg; 0.5 ppm; 1.0 ppm and 0.05 ppm) respectively, set by internationally-approved regulatory bodies. Arsenic concentrations were not detected in all the samples analyzed. Lead was not found in domesticated grass cutters. In conclusion, some heavy metal concentrations were found to be higher than the threshold limit recommended by FAO/WHO.

Biography

John Oamen Igene completed his PhD from the Michigan State University and Postdoctoral studies from the University of Agriculture, Malaysia. He became a Professor at the age of 39 years. He is currently the Chairman of the University of Benin Research and Publication Committee (URPC). His research interest includes animal production science and technology, contamination in meat/meat products, food processing and post-harvest technology. He has published more than 120 papers in reputed journals and has been serving as an Editorial Board Member of repute. He has several international awards to his credit. He is the recipient of two international grants (FAO, 1987 and USAID, 2018-2005) for transformation of kilishi production process from pilot plant stage to commercialization.

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