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ABSTRACT

Geophagy is the deliberate consumption of soil and clay by man for various reasons which are known to the consumer. The mineralogical and geochemical composition of clay affects the properties which are considered when choosing desirable clay. Thiss study was carried out to determine the mineralogical and trace elemental concentration of some geophagic clay from Mowe market, southwestern Nigeria. The geophagic materials were sampled from various market stalls in Mowe market. The samples were pulverized and sieved prior to analysis. Representative samples were subjected to X-ray diffractrometry for mineralogical analysis and geochemical analysis was carried out by Inductively Coupled Plasma-Atomic Emission Spectrometry. Mineralogical analysis revealed that the geophagic materials contained smectite and quartz as the dominant mineral, with minor amounts of palygorskite, kaolinite, goethite, anatase and halite. Clay that contains more of kaolinite, smectite and palygorskite may be more desirable because of antacid effect, good swelling property, good absorption and adsorption than clay that contains more of quartz because of the risk of enamel bleeding and intestinal rupture that can be caused by quartz consumption. Geochemical analysis result (ppm) revealed that Pb, Zn, Cu, As, Mn and Co in the samples ranged 21-33, 18 - 95, 4 - 9, 5 - 6, 18 - 580 and 1 - 18 respectively. Metal ratio calculated for Zn, Cu, Pb and As revealed values ranging from 0.19 - 1, 0.09-0.2, 1.05-1.65 and As having values ranging from below detection limit to 0.46. In conclusion if geophagy must be practiced, precautions must be taken when sourcing for geophagic clay so as to ensure that they pose no risk to the human health, it could also be ensured that samples of high toxicity and undesirable mineralogical content are not consumed.