

Abstract

Geophagy is the deliberate consumption of soil and clay deposits by animals, including man. During pregnancy all the nourishment needed by the developing fetus comes from the mother, either the food she eats or the supplement she may take. The geochemical and mineralogical composition of the materials which are consumed by pregnant women from Meru, Embu and Chuka open air markets were studied. The geophagic materials were subjected to standard digestion procedures and analyzed for full assay and elemental analysis for Co, Zn, Mg, Cu, Pb and Cd using Atomic absorption spectrometry and Energy-dispersive x-ray fluorescence spectrometry in 30 geophagic samples. The mineralogical composition was investigated using X-ray diffractometry (XRD). The geochemical analysis revealed that the geophagic materials contain high levels of silica from 48.59 to 60.27%. Geophagic materials from Embu showed the highest concentration of Pb at 0.96 ppm. The levels of Pb in all samples exceeded the levels recommended by WHO/FAO limits of 0.01 ppm. The levels obtained for Cd in all the samples did not exceed the WHO/FAO limits of 0.003 ppm. The XRD data showed that the geophagic materials of the area consisted mainly of silica.