

The heavy metal contents of some selected medicinal plants sampled from different geographical locations

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ABSTRACT

Background The levels of 5 minerals namely; lead, arsenic, mercury, cadmium, and aluminum were assessed in 10 medicinal plants sampled from 5 different geographical locations to determine the effect of location on the plants' mineral content. **Materials and Methods** Atomic absorption spectrophotometry (wet digestion) was used for the analyzes, and content of the minerals per sample was expressed as mg/g. The levels of minerals were compared to their limit specification for herbs and daily total intake of these minerals. A two-way analysis of variance, which tends to look at the effect of the location and the medicinal plant itself on the plants mineral content, was used in the statistical analysis. **Results** Lead (Pb) was present in all plant species examined, except *Ocimum gratissimum*. One plant exceeded the maximum safety limit for lead. Cadmium was also detected in some of the medicinal plant species (44%) whilst majority were below the detection limit (0.002) representing 56%. 40% of the plant species exceeded the limit for cadmium. Mercury and arsenic in all the plant species were below the detection limit (0.001). Significant variation existed in mineral content for the various locations ($P = 0.05$). **Conclusion** The findings generally suggest the variation in mineral levels for the various locations. Thus, our study has shown that same species of medicinal plants, growing in different environments, accumulates different levels of heavy metals.

KEYWORDS

Geographical locations . heavy metals . medicinal plants . minerals

REFERENCES