CONCENTRATION OF COPPER, ZINC, CADMIUM AND LEAD IN SELECTED HERBS

NIK NABIHAH HANIM NIK EFFENDI

BACHELOR OF SCIENCE (Hons.) CHEMISTRY
FACULTY OF APPLIED SCIENCES
UNIVERSITI TEKNOLOGI MARA

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ABSTRACT

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It is very obvious that herbs are sources that are used since many years ago until now. This is because herbs have many purpose such as in cooking, perfumes, disinfectant and most important is use as a natural medicine. In the current study, the concentration of some essentials and non-essentials heavy metals such as zinc (Zn), copper (Cu), lead (Pb) and cadmium (Cd) exist in selected herbs that were bought from the local markets were analysed using Atomic Absorption Spectroscopy (AAS) after using dry ashing as a treatment method. Selected herbs consist of *Zingiber officinale* (ginger), *Curcuma longa* (turmeric) and *Alpinia galangal* (galangal). The concentration ranges for the heavy metals were found to be 0.221-0.442 mg/kg, 0.008-0.064 mg/kg, below detection limit (BDL)-0.136 mg/kg and 0.006-0.083 mg/kg for Zn, Cu, Pb and Cd respectively. Concentration for heavy metals analysed were below the permissible limit that recommended by Malaysian Food Regulation (1985). The Hazard Index (HI) for all heavy metals was found to have the value less than 1. HI value for *Zingiber officinale, Curcuma longa* and *Alpinia galangal* were 2.02×10^{-5}, 6.85×10^{-5} and 6.85×10^{-5} respectively. Thus, the daily intake will not expose any risk to the consumers if the concentration of heavy metals is concerned and there is no non-carcinogenic risk from the digestion of these four metals individually.

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