DETERMINATION OF HEAYY METALS IN VEGETABLES BY USING INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROSCOPY (ICP-OES)

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Final Year Project Report Submitted in

Partial Fulfillment of the Requirements for the

Degree of Bachelor of Science (Hons.) Chemistry in the Faculty of Applied Sciences

Universiti Teknologi MARA

JULY 2017

ABSTRACT

DETERMINATION OF HEAVY METALS IN VEGETABLES USING INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROSCOPY (ICP-OES)

The aim of this study was to determine the concentration of heavy metals (Cu, Ni, Zn, Pb and Cd) in selected vegetables (carrot, mustard green, calabash, gai lan, long bean, cabbage and cauliflower) using inductively coupled plasma optical emission spectroscopy (ICP-OES). The content of heavy metals in the vegetable then compared with the standard for allowable amount of toxic heavy metals as set by Joint World Health organization (WHO)/Food Agricultural Organization (FAO) and also by the previous studies carried out by other researchers. The concentrations of heavy metals in vegetables samples were ranged from 0.01 µg/g to 0.037 µg/g for Ni, 0.05 µg/g to 0.12 µg/g for Cu, 0.06 µg/g to 0.42 µg/g for Pb, 0.1 µg/g to 0.57 µg/g for Zn and the concentration of Cd was not detected in all tested vegetable samples. The trend concentration of metals was as follow in vegetables: Zn > Pb > Cu > Ni > Cd. All heavy metals content obtained in vegetables were below than the maximum permissible limits as stated in World Health Organization (WHO) and Food Agricultural Organization (FAO).

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