

HEAVY METALS IN SELECTED EDIBLE VEGETABLES AND ESTIMATION OF THEIR DAILY INTAKE IN SANANDAJ, IRAN

Afshin Maleki¹ and Masoud Alasvand Zarasvand²

¹Faculty of Health, ²Faculty of Medicine, Kurdistan University of Medical Sciences, Sanandaj, Iran

Abstract. The levels of four different heavy metals [cadmium (Cd), lead (Pb), chromium (Cr) and copper (Cu)] were determined in various vegetables [leek (*Allium ampeloprasum*), sweet basil (*Ocimum basilicum*), parsley (*Petroselinum crispum*), garden cress (*Lepidium sativum*) and tarragon (*Artemisia dracuncululus*)] cultivated around Sanandaj City. The contributions of the vegetables to the daily intake of heavy metals from vegetables were investigated. One hundred samples (20 samples per month) were collected for five months. Atomic absorption spectrometry was used to determine the concentrations of these metals in the vegetables. The average concentrations of each heavy metal regardless of the kind of vegetable for Pb, Cu, Cr and Cd were 13.60 ± 2.27 , 11.50 ± 2.16 , 7.90 ± 1.05 and 0.31 ± 0.17 mg/kg, respectively. Based on the above concentrations and the information of National Nutrition and Food Research Institute of Iran, the dietary intake of Pb, Cu, Cr and Cd through vegetable consumption was estimated at 2.96, 2.50, 1.72 and 0.07 mg/day, respectively. It is concluded that the vegetables grown in this region are a health hazard for human consumption.

Correspondence: Dr Afshin Maleki, Department of Environmental Health, Faculty of Health, Kurdistan University of Medical Sciences, Pasdaran Street, Sanandaj, Iran.

Tel: +98 871 6661817; Fax: +98 871 6625131

E-mail: maleki43@yahoo.com