عنوان مقاله:

Health Risk Assessment of Heavy Metals in the Medicinal Plants Ziziphora clinopodioides and Echinophora platyloba in West Islamabad and Sanandaj Regions

محل انتشار:

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نویسندگان:

Hosna Pour Abbasi – Department of Food Industries, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran

Khoshnaz Payandeh – Department of Soil Sciences, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran

Mehrnoosh Tadayoni – Department of Food Industries, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran

خلاصه مقاله:

Background & Aims: Medicinal plants are part of traditional medicine, which has many uses in the treatment of diseases and human health. This research was conducted to evaluate heavy metals in two species of Ziziphora clinopodioides and Echinophora platyloba. Materials and Methods: In each of the cities of Islamabad and Sanandaj, five sampling stations were determined, and from each station, ۵ samples of Kakuti plant and ۵ samples of Khosharizeh plant were collected from ۳ different places of non-agricultural lands in the summer season of ۲۰۲۱. The mean data of heavy metals were compared with each other using a one-way analysis of variance and Duncan's test. Results: The average of manganese (Mn) in Z. clinopodioides and E. platyloba (۵۱۱۲.۹۵ and ۴۲۵۸.۶۷ mg/kg) was significantly higher than other heavy metals ($P < ۰.۰۵$). In addition, the average of arsenic in Z. clinopodioides and E. platyloba (۰.۰۰۲ mg/kg and ۰.۰۰۱ mg/kg) had significantly the lowest values among the studied heavy metals ($P < ۰.۰۵$). The results of the health risk assessment showed that the highest risk index of heavy metals in Z. clinopodioides and E. platyloba in the age group of children was related to Mn (۱۲.۱۵ and ۱۲.۷۴, respectively). On the other hand, the lowest value of the risk index of heavy metals for the consumption of Z. clinopodioides and E. platyloba for children and adults was obtained for iron (۰.۴۸ and ۰.۳۲, respectively). The highest carcinogenic risk index of the Kakuti plant was observed in two age groups of children and adults regarding cadmium (۰.۰۹۹ and ۰.۰۹۸, respectively). Conclusion: The analysis of the health risk assessment of heavy metals in the samples of Z. clinopodioides and E. platyloba in two regions of Islamabad and Sanandaj revealed that the consumption of these two plants is dangerous for the health of people of different age groups.

کلمات کلیدی:

Medicinal plants, Kakuti, Khosharizeh, Heavy metals, Risk assessment, Health