

عنوان مقاله:

Contamination and Health Risks from Heavy Metals (Cd and Pb) and Trace Elements (Cu and Zn) in Dairy Products

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خلاصه مقاله:

Background and Purpose: Dairy products are known as an important food in human diet. This study was carried out to analyze the content of metals (Cd, Cu, Pb, and Zn) in butter and cheese, and evaluates the potential health risks of metals to humans through the consumption of dairy products. **Materials and Methods:** In this analytical observational study, a total of ۳۲ samples of butter and cheese were collected from the market basket of Hamadan City in ۲۰۱۶. After preparing and processing the samples in the laboratory, the content of metals were determined using inductively coupled plasma-optical emission spectrometer (ICP-OES). Also, all statistical analyses were performed using SPSS Software according to Shapiro-Wilk test for normality, One Way ANOVA (Duncan Multiple Range Test), Pearson's correlations, and Independent t-test. **Results:** The results of the current study showed that the mean concentrations ($\mu\text{g kg}^{-1}$) of Cd, Cu, Pb and Zn in butter samples were 0.83 ± 0.15 , 6.25 ± 1.76 , 21.75 ± 10.94 , and 131.35 ± 9.24 , respectively, while in cheese samples, they were 0.70 ± 0.11 , 39.43 ± 40.26 , 12.85 ± 2.41 , and 198.08 ± 10.97 , respectively. Also, the Target hazard quotient (THQ) values in adults and children through the consumption of butter and cheese were within the safe limits ($\text{THQ} < 1$). **Conclusion:** Considering the serious contamination of some brands of butter and cheese by Cu and Pb, a control of heavy metals and trace elements levels during the whole production .processing of dairy products must be applied

کلمات کلیدی:

Food safety, Metal Contamination, Health Risk Index, Milk

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