

Evaluation of Nuts as a Source of Selenium in Diet

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Abstract : Selenium (Se) is an essential element for human health. As an integral part of glutathione peroxidase, it has antioxidant, anti-inflammatory and anticancer activities. Unfortunately, Se dietary intake is often insufficient, especially in regions where the soil is low in Se. Therefore, in search for good sources of Se, the content of this element in food products should be monitored. Food product can be considered as a source of Se when its standard portion covers above 15% of recommended daily allowance. In the case of nuts, 42g is recognized as the standard portion. The aim of this study was to determine the Se content in nuts and to answer the question of whether the studied nuts can be considered as a source of Se in the diet. The material for the study consisted of 10 types of nuts (12 samples of each one): almonds, Brazil nuts, cashews, hazelnuts, macadamia nuts, peanuts, pecans, pine nuts, pistachios and walnuts. The nuts were mineralized using microwave technique (Berghof, Germany). The content of Se was determined by atomic absorption spectrometry method with electrothermal atomization in a graphite tube with Zeeman background correction (Hitachi, Japan). The accuracy of the method was verified on certified reference material: Simulated Diet D. The statistical analysis was performed using Statistica v. 13.0 software. Statistical significance was determined at $p < 0.05$ level. The highest content of Se was found in Brazil nuts ($4566.21 \pm 3393.9 \mu\text{g}/\text{kg}$) and the lowest in almonds ($36.07 \pm 18.8 \mu\text{g}/\text{kg}$). A standard portion (42g) of almonds, brazil nuts, cashews, hazelnuts, macadamia nuts, peanuts, pecans, pine nuts, pistachios and walnuts covers the recommended daily allowance for Se respectively in: 2, 192, 28, 2, 16, 7, 4, 3, 12, 6%. Brazil nuts, cashews and macadamia nuts can be considered as a good source of Se in diet.

Keywords : atomic absorption spectrometry, diet, nuts, selenium

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