

Elemental analysis of Chinese and Japanese peanuts by PIXE

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Abstract

Elemental concentration in Chinese peanuts was analyzed and compared with that in Japanese peanuts by means of a PIXE (Particle Induced X-ray Emission) technique with an internal standard method to investigate toxic elements in them because frequent detection of contamination of toxic elements or excessive agrochemical residues in food imported from China has posed serious health concerns to Japanese people. The authors prepared the samples by separating the peanut seed into two cotyledons (seed leaves) and an embryo. The present result showed that there were not significant differences in concentration for major elements between Chinese and Japanese peanuts, while higher concentration of Ni and Sr was observed in the Chinese peanut sample. It is suggested that the high concentration of these elements is related to pollution of the soil.