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Radiometric analysis of potassium, radium and uranium levels in Brazil nuts

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ABSTRACT

The paper describes an alternative approach for the determination of uranium, radium-226 and potassium levels in Brazil nuts. Potassium analysis was performed by a NaI detector using 1-gram of nut's ashes, radium analysis was carried out by radon emanation measurements after EDTA-mediated ash dissolution, and uranium levels were determined by alpha spectroscopy after acidic dissolution and liquid extraction of the element. A total of eight different brazil nut samples obtained from local markets has been investigated and their potassium, radium-226 and uranium levels have been compared to literature values, indicating the applicability of the proposed methods.

Key words: Brazil nuts, radium, potassium, EDTA-mediated dissolution, radon emanation, gamma- and alpha-spectrometry

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