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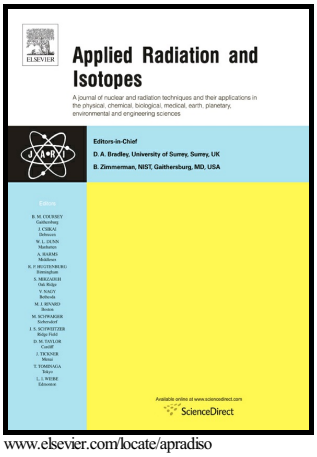

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Spiked environmental matrix for use as a reference material for gamma-ray spectrometry: production and homogeneity test

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Abstract

The application of a spiking method for reference material production and its utilization for a food matrix is presented. The raw rice powder was tested by means of γ-ray spectrometry and spiked with a ^{137}Cs solution. The spiked material was mixed and tested for homogeneity. The future use of the rice powder reference material after the entire characterisation cycle will be for γ-ray spectrometry method validation.

Keywords: radioactivity in food; ^{137}Cs; spiked reference material; food matrix; γ-ray spectrometry

1. Introduction

Anthropogenic radionuclides present in the environment need to be monitored since only detailed knowledge on their massic activity allows for the adequate protection of the population against the ionizing radiation (ICRP, 1992). In order to obtain reliable measurement data, laboratories need to implement essential quality assurance measures such as the use of validated methods, appropriate reference materials, internal procedures for quality control, participation in

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