Environmental Radioactivity Monitoring Plan in Uruguay

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Abstract

Natural radionuclides are present in many natural resources. The study of natural radioactivity and radioactive contamination of territories is an important and necessary condition for the correct understanding and investigation of sources of radiation exposure of the environment and of the population. Uruguay's economy relies heavily on trade, particularly in livestock production and agricultural exports. Today, agriculture contributes roughly 15% to the country's GDP (Gross Domestic Product). This work describes the aim of the Radioactivity Monitoring Plan in Uruguay, how it was implemented, the sampling sites, type of samples, the analytical and measurement method and the quality control used. The activity concentrations of ^{40}K, natural radionuclides of ^{238}U and ^{232}Th series and ^{137}Cs were measured. The representative results of the environmental samples are shown. The representative results of the principal Uruguayan foodstuffs are shown. The obtained results show that in all foodstuffs analyzed samples (meat, milk, cheese, butter, rice), ^{137}Cs activity concentration were below the Detection Limit. In environmental samples, in no case significant values of ^{137}Cs are observed in soil samples. It is possible state that in no case it has been obtained values different from the values of the natural background. According to the ALARA principle for protection of the population that exposure should be "as low as reasonably achievable", Uruguay is working in the regulatory framework to base national regulations on the results of its Environmental Radioactivity Monitoring Plan.