

FOOD AND WATER RADIOACTIVITY SURVEILLANCE SYSTEM IN ROMANIA

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Justification

Food and water radioactivity content are closely related both to natural radioactivity and also generated by contamination due to anthropic nuclear activities. Consequently, in accordance with the European Union acquis and World Health Organization recommendation, surveillance systems were operationalized in many European countries. According to the national Romanian derived legislation the public health authorities are responsible for organizing and coordination of the national surveillance system for water and food radioactivity and their health related effects.

Objectives

Description of the levels and type of radioactivity of drinking water and main foodstuffs and their contribution to the Romanian population exposure in order to elaborate appropriate public health interventions.

Method

The gross parameters, alpha and beta, have been used for screening surveillance of drinking water sources indeed for potable purposes in order to identify those that could exceed the total indicative dose of 0.1 mSv/year.

The food surveillance was focused on the main foodstuffs including milk, meat, fish, eggs, bread, potatoes, root vegetables (mainly carrots), leafy vegetables (mainly cabbage), fruits, and canteen menu, controlled for presence and level of radioactivity for ¹³⁷Cs, ⁹⁰Sr, ²²⁶Ra, ²¹⁰Po and ⁴⁰K. Nuclear facility related monitoring for areas as Nuclear Power Plant Cernavoda (type HWR-CANDU) and for regions with activities of extraction and fabrication of uranium fuel includes monitoring of radioactivity for: environmental deposit levels, surface waters, spontaneous vegetation, drinking water and foodstuffs.

Results

- the water radioactivity surveillance results, mapped by administrative borders of the national territory, reveal that parameters of drinking water complies both with Drinking Water Directive 98/83 EC and WHO recommendation/2004.
- for food stuff radioactivity
 - mean registered values fully comply with reference for natural radionuclides and reporting levels for artificial radionuclides
 - the highest values for ¹³⁷Cs and ⁹⁰Sr have being registered in the Sub-Carpathians region, the most affected regions due to the Chernobyl accident.

Conclusions

The radioactive surveillance results shows levels of radioactivity for drinking water and food stuffs without significant health impacts for health status of the population.