EFFICIENT COUNTERMEASURES: THE BASIS OF POST-CHERNOBYL REMEDIATION AND SUSTAINABLE DEVELOPMENT OF THE AFFECTED TERRITORIES OF THE REPUBLIC OF BELARUS

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Плотность загрязнения территории ¹³⁷Cs в Беларуси



годом



Priority Areas of the Program Activities



Social protection, medical maintenance and regular health improvement provided to the affected population.



Radiation protection and direct target-oriented implementation of protective measures.



Design and implementation of specific **projects** to facilitate **modernization** and efficient utilization of production capacities, natural, primary and labour recourses, **social development**, human capacity building.



Improvement of public outreach policy on the problems related to mitigation of the Chernobyl accident consequences, including outreach to the population, information sharing and dissemination etc.

Tasks and Objectives

In the framework of radiation protection and targetoriented implementation of protective measures

Two categories of population should be distinguished when choosing the most appropriate strategy of protective measures for reducing the internal dose *in the long term*

Category 1: Residents of contaminated areas who consume foodstuffs of local production

Objective: Reduction of individual effective doses received through the consumption of local contaminated foodstuffs

Category 2: People who live in clean areas, but may consume foodstuffs produced in contaminated areas

Objective: Reduction of the collective radiation dose associated with export of foodstuffs produced in contaminated areas

Radiation Control System



is developed and implemented in order to:

Assess the radiation situation and determine the levels of ionizing radiation exposure

Exclude production and storage of foodstuffs and raw materials with radionuclide concentration levels above the specified limits

Evaluate the effectiveness of protective measures, provide their optimal and targeted implementation

Develop a sound *strategy* of recovery actions





TPLs – Temporary Permissible Levels RPLs – Republican Permissible Levels (RPLs-99 is a current national standard for ¹³⁷Cs) 9 Internal Radiation Doses of the population of Belarus depending on particular RPLs, mZv/year



TPLs – Temporary Permissible Levels

RPLs – Republican Permissible Levels (RPLs-99 is a current national standard for ¹³⁷Cs)

Effectiveness of Agrotechnical and Agrochemical Techniques Towards Reduction of ¹³⁷Cs Uptake by Agricultural Produce

		During the first 5 years	After the first 5 years
bughlands	Soil Treatment (real tillage, deep tillage)	5,0	1,5
	Lime Treatment (lime rate: 1,5 Hr)	4,0	2,0
	Application of organic fertilizers	2,5	2,0
	Application of phosphate fertilizers	1,5	0,5
	Application of potassium fertilizers	3,5	3,0
	Optimization of nitrogen fertilization rates	2,5	1,5
	Selection of crop types with minimal uptake ability	30	5,0
Meadows	Root improvement	6,0	3,0
	Surface improvement	3,0	1,5
	Selection of grass mixtures	3,0	2,0

Application of Cesium Binders



Giese Salt $NH_4Fe[Fe(CN)_6]$

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Nigrovich Salt KFe[Fe(CN)₆]



The Effects of Milk Processing on ¹³⁷Cs and ⁹⁰Sr (13) Concentrations in End Products





Collective Radiation Doses after Alternative Use 15 of Contaminated Grain Crops



Thank you for your kind attention!