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BIOCHEMICAL SAFETY

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Abstract

This paper concerns some aspects of the biochemical safety of everyday life and regulations. The aim of the complex of measures for biological and chemical protection of the surrounding environment is to maximize the reduction of the negative effect of chemicals on the body. Ensuring biochemical safety is a set of measures aimed at reducing harmful effects – radioactive radiation, toxic substances and heavy metals – on the human body and animals, as well as to prevent it from getting into water and food raw materials. This question is one of the most important in the system of ensuring national security. Sources of chemical hazards are toxic chemicals, poisonous and hazardous chemically hazardous substances. Undesirable effects of drugs and pharmaceuticals, pesticides and household chemicals. Food and drinking water safety. In the results concluded that there are two aspects of society environmentally healthy: “ecological society” and “human ecology” interconnected systems of views on phenomena in the world, nature and society.

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1. Introduction

The aim of the complex of measures for biological and chemical protection of the surrounding environment is to maximize the reduction of the negative effect of chemicals on the body.

Biochemical safety must fulfill the following tasks:

- Early detection of the amount of radioactive and hazardous chemical waste released into the atmosphere;
- Establish the fact of the ingress of toxic substances into the air, warn the population about the danger, etc.
- Using information technology to create a set of measures to control contamination with hazardous chemical and biological substances.

Biochemical protection of the population is a set of measures that include organizational, technical, engineering and a systematic approach to implementation in the field of ensuring chemical and biological safety. Normative acts (conventions, protocols, agreements) on the protection and use of watercourses, conferences and symposia aimed at ensuring the rational use of water resources, methodological aspects, modeling and risk assessment of chemical and biological hazards involves the creation of a system for the prevention and elimination of emergencies, which provides for forecasting, warning and countering threats and other types of work that are aimed at preventing or reducing the harmful effects of the chemical industry on the environment and humans (Ashmarin et al., 1975).

2. Problem Statement

Sources of chemical hazards are toxic chemicals, poisonous and hazardous chemically hazardous substances. Undesirable effects of drugs and pharmaceuticals, pesticides and household chemicals. Food and drinking water safety.

Sources of biological hazard are pathogens (viruses, bacteria, fungi, etc.), ecopathogens, ecotoxicants and biological damaging agents, biologically hazardous biotechnologies and production, as well as sources of natural biological pollution (Ataeva, 2009).

Sanitary and epidemiological standards and special safety techniques. Means and methods for identifying sources of chemical and biological hazards, test systems and biosensors, all these methods and technical means for analyzing and identifying chemical and biological agents.

3. Research Questions

An effective and comprehensive solution to all aspects of the problem of ensuring chemical and biological safety is largely determined by the availability of information and the awareness of specialists on all issues of interest necessary for the formation of balanced scientifically grounded state programs and positive public opinion in relation to their practical implementation (Kirilov, 1991).

4. Purpose of the Study

It is known that the quality of drinking water determines the health of the nation and the standard of living of the population. In this regard, one of the urgent tasks is to provide the population with high-quality drinking water. In the conditions of scientific and technological progress, the need for water is growing and the discharge of waste water is increasing. This process is accompanied by a deterioration in the quality of water in water sources and a limitation of the possibility of their use for industrial needs, agricultural purposes, fish farming, cultural, household and especially drinking water use. The problem of high-quality drinking water is relevant and is associated with a change in the natural properties of water in the main sources of water supply under the influence of anthropogenic factors. A specific complex of heavy metals, microorganisms present in the sources of domestic drinking water supply, are represented by various salts of heavy metals, the content of which does not change during the water treatment process (Ataeva & Tikhomirova, 2009).

Our earlier studies have shown that the generally accepted combined method of water treatment does not allow obtaining water with satisfactory organoleptic properties, effectively removing heavy metals and some microorganisms. We calculated the environmental risks and damage to the health of the population of Grozny, associated with the use of drinking water containing a specific complex of heavy metal salts (PNDFI, 2008).

5. Research Methods

In this regard, the development of a technology for additional purification of drinking water according to an improved scheme with the use of an innovative nanostructured biologically active sorbent, which makes it possible to normalize the organoleptic properties of drinking water in accordance with the requirements of standards, seems relevant.

The relevance of the development of this biotechnology is also associated with the solution of the problem solved at the state level – the problem of providing the population with quality drinking water and the need for quality water treatment and water purification. Despite the numerous technologies used for the treatment of drinking and waste water, it should be noted that there are currently no high-quality means for the complex purification of water from chemical and biological contaminants.

6. Findings

Conduct comprehensive eco-toxicological studies in accordance with the guidelines for the experimental study of chemicals during their hygienic regulation in water.

The experimental data was statistically processed according to generally accepted methods, the results were calculated in Microsoft Excel 2003 software package (for Windows XP).

The problem of modern applied ecology is also the study and development of geothermal waters, control of their quality when used for balneological purposes as a necessary condition for ensuring the safety of public health. Geothermal waters are a potentially important source of valuable minerals and metals. The territory of the Chechen Republic is one of the most promising regions of Russia, with large

resources of thermal waters in fourteen deposits. A large amount of reserves of geothermal waters, low salinity, high flow rates and temperatures, low corrosive activity of the waters of the deposits make the complex use of the thermal waters of the Chechen Republic promising. The use of this energy is an environmentally friendly process, and the creation of circulation systems to maintain reservoir pressure in the fields excludes the discharge of water, thereby minimizing the damage to the environment. The quality and properties of the thermal waters of the Chechen Republic make it possible to use them in a complex: for generating electricity; heat supply; extraction of useful chemical components, especially silicon; in balneology, etc.

Analysis of the current ecological situation shows that the exploitation of geothermal resources inevitably leads to unloading the use of drinking water.

Research into the composition of metal compounds in soils and the mechanisms of their transformation is growing in connection with the need to obtain an adequate assessment of the current state of contaminated soils. The relevance of this study is due to the need for accurate knowledge of the degree of pollution for effective protection of the environment from hazardous chemical elements.

Exhaust gases of cars are the sources of HM entering the soil and the environment. The car is an integral part of many technological processes. At the same time, it is one of the main sources of air, water and fertile soil pollution.

HMs are capable of forming complex compounds with organic substances of the soil, therefore, in soils with a high humus content, they are less accessible for absorption. Excess moisture in the soil promotes the oxidation of HMs and the transition to their soluble forms. Plants can absorb trace elements from the soil, including HMs, accumulating them inside or on the surface of leaves, thus being an intermediate link in the “soil-plant-animal-human” chain.

At present, various methods have been proposed for preventing the consequences of HM intoxication of biological objects with the help of chemotherapeutic agents.

7. Conclusion

The chemical industry is actively developing; therefore, the issue of the country's chemical safety is very acute. Chemicals are used in almost any field of activity, this industry has become widespread, therefore, for the further development of the field, it is necessary to ensure the safety of the technological process in a timely manner.

Ensuring biochemical safety is a set of measures aimed at reducing the harmful effects of chemicals on the environment, animals and people. Carrying out such activities implies the complete elimination or maximum reduction of the impact of chemicals on the environment and humans. This question is one of the most important in the system of ensuring national security.

Two concepts can make a society environmentally healthy: “ecological society” and “human ecology” interconnected systems of views on phenomena in the world, nature and society.

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