

• for a given period of observation, the degree of risk of illness is characterized as moderate. The largest value of COED is observed in 2012 – 1.0374, the smallest – in 2014 – 0.1020. A sharp decrease in CDER in 2014 is associated with a decrease in the incidence rate.

Important is the formation of high-risk groups and the rehabilitation of identified risk factors.

Thus, at the present time in the Republic of Belarus there is a decrease in the incidence of lung cancer, which may be due to aging of the population and other factors, including lifestyle factors (in particular tobacco abuse, malnutrition), the use of certain medications, production environment.

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ESTIMATION OF THE LEVEL OF RADIOACTIVE EXPOSURE ON SEPARATE COMPONENTS OF FOREST ECOSYSTEMS OF THE BELARUSIAN POLESIE

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Pollution of vegetation is associated with the root consumption of elements of mineral nutrition by absorbing radionuclides from the soil. This process depends on many factors, among which the main are the properties of radionuclides and the forms of their location in the soil, the physical and chemical parameters of the soil, the biological characteristics of plants, weather and climate conditions.

Keywords: pollution of forest ecosystems, accumulation of radionuclides, transfer coefficients of radionuclides.

One of the main factors of anthropogenic impact on nature is pollution of the environment by radionuclides that fell as a result of nuclear weapons tests and accidents at nuclear power facilities. Accumulation of radioactive substances by plant complexes is the most important environmental problem in the Republic of Belarus, which arose in connection with the Chernobyl accident.

Prior to the Chernobyl accident, the radiation situation in Belarus was mainly determined by natural radionuclides: 40K, 232Th, 238U.

The maximum contribution to the value of the natural radiation background is 40K. Most of it on clays and loams, a lower content – on sandy loams and sands, and even less is found on peaty-marsh soils. Uranium and thorium in the earth's crust are found in tens and hundreds of times less than 40K.

As a result of the nuclear weapons test, artificial radionuclides – 137Cs, 90Sr, 144Ce, 106Ru, 238, 239, 240Pu – entered the territory of the republic.

Forest ecosystems fulfill their natural functions and are a natural barrier to the flow of radionuclides and prevent their secondary redistribution. Forests have shown themselves as a battery of radioactive fallout, having accumulated a large number of radionuclides. For 30 years the area of contaminated forest land has decreased from 25% to 18%.

One way to assess the dynamics of the transition of radionuclides to vegetation is to analyze data on the change in radionuclide transport coefficients over time.

According to the data, the mean value of ¹³⁷Cs transfer coefficient to pine wood is 2,4 (10–3 m²/kg) with minimum and maximum values of 0,03 and 23,3 (10–3 m²/kg), respectively. Also in the reports are data on the coefficients of accumulation, calculated as the ratio of the specific activity of the radionuclide in the raw tissue to its specific activity in dry soil. For coniferous plantations in the case of cesium, they range from 0,003 to 3,5; and its average value is 0,36 [1].

Thirty years after the radioactive fallout, the accumulation of ^{137}Cs and ^{90}Sr by various parts of the growth and undergrowth plants in the pine forests of the reserve continues to be determined by species specificity of the plants to accumulate them and to a lesser extent by the conditions of the site of occurrence.

The specific specificity of accumulation of ^{137}Cs and ^{90}Sr by different parts of plants growing underbrush and undergrowth differs by forest types. In the species of undergrowth and undergrowth, a general tendency is observed to increase the transition coefficient of ^{137}Cs and ^{90}Sr from wood to roots. Between the roots and leaves of pronounced orientation, their changes in the undergrowth and the undergrowth stage have not been revealed.

With the increase in soil moisture, the tendency of ^{137}Cs transition to the components of undergrowth and undergrowth species to decrease and ^{90}Sr of ^{90}Sr transition coefficient in the organs and tissues of plants undergrowth and undergrowth is on average an order of magnitude higher than the ^{137}Cs transition coefficient [2].

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DEVELOPMENT OF A SOFTWARE MODULE ON THE ESTIMATION OF THE EXPOSURE TO THE PROTECTION OF ATMOSPHERIC AIR DURING THE STATE ECOLOGICAL EXPERTISE

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The implementation of the state policy of the Republic of Belarus in the field of ensuring environmental safety is carried out, including through the mechanism of state environmental expertise, including phased control in the field of environmental protection (at the stage of placing the construction object, when issuing a conclusion of state environmental review, issuing a conclusion on compliance with environmental requirements safety of the completed construction of the facility, at the stage of post-project analysis).

Keywords: state environmental expertise, automated information system, EcoNaR, standards for permissible emissions, pollutant.

The automated information system is designed to automate and prepare project documentation when submitting projects for state environmental impact assessment, including automating the process of calculating environmental safety indicators when planning and carrying out business and other activities that use natural resources and (or) is affected environment, visualization of the calculated data using geographic information systems (GIS), as well as during state ecological expertise.

The developed system is designed for use by employees of the state institution of education "Republican Center for State Ecological Expertise and Advanced Training of Executives and Specialists" of the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus during state environmental impact assessment, design organizations and institutions to automate the calculations of the methods given in environmental norms and rules of the EcoNaR 17.01.06-001-2017 "Environmental Protection and nature management. Environmental Safety Requirements", other legislative acts.