

GS-1302-004

ON SANITARY AND EPIDEMIOLOGICAL STATE OF THE ENVIRONMENT

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Abstract: Among the many factors that influence the health of the population, the environment, nutrition and any other have a significant importance. Recently there was noted stabilization of the main indicators, used for characterization of the sanitary-epidemiological situation in the country, and the measures taken by the Federal Service for the Oversight of Consumer Protection and Welfare have played no small part in this.

Vehicles, however, remain to be the main source of air pollution in the Russian Federation. In adverse for water supply regions of the country also there is a threat to public health. The main reason of the arising unsatisfactory situation with water pollution of water bodies the state of wastewater discharged into the sewage facilities.

It is necessary to carry out the reconstruction of waste treatment facilities. There is a sharp problem of sanitary cleaning of the occupied places (illegal dumps are widespread). There are no landfills for the utilization of toxic wastes, practically methods of their destruction aren't developed.

Thus, first of all it is necessary to liquidate those ecological consequences which negatively influence on groups of risk children, teenagers, pregnant women.

Key words: health legislation, air, water supply, water bodies, toxic waste, illegal dumps

GS-1302-011

ALGORITHM FOR COMPLEX CONTROL AND RADIATIONHYGIENIC EVALUATION OF THE QUALITY OF UNDERGROUND DRINKING WATER IN THE MOSCOW REGION

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Abstract: On the basis of assessing the quality of underground drinking water in the Moscow region, selected and justified in the process of radiation-ecological monitoring of water quality control criteria of the underground water sources in the region are encouraged to develop an algorithm for complete monitoring and assessing the quality of underground drinking water in the Moscow region on indicators of radiation and chemical safety, presented in a scheme.

Key words: criteria for quality control; algorithm; the optimization of radionuclide analysis; groundwater in the Moscow region

GS-1302-016

PSEUDOALLERGIC STATES

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Abstract: The analysis of works on the study of the hyperreactivity of the human organism to the chemical factors of environment testifies about the significance of the development of this direction in hygienic studies. During rate setting of the content of chemical substances the effect of hypersensitivity to the factors of environment is limiting. In hygienic studies up to now non allergic hypersensitivity (pseudo-allergic response) was not considered, its prevalence among working-age population was not studied and no system of the differential estimation of true allergy and pseudo-allergic response for the practical use in the inspections of population was developed.

Key words: allergy; pseudoallergy; hypersensitivity

GS-1302-018

HYGIENIC ASSESSMENT OF DRINKING WATER CHLORINATION BY-PRODUCTS IN VIEW OF MULTIROUTE EXPOSURE

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Abstract: On the example of three stationary sampling points in houses of the Western Administrative District data on presence of trihalomethanes (TGM) – the main by-products of chlorination in cold drinking and hot tap water of Moscow were analyzed. Since the middle of 2007 the concentration of chloroform and other TGM in tests of tap water were established to be defined at levels steadily below hygienic maximum concentration limits. In the performed experiments it is revealed that, despite rather low content of chloroform in water, when using a hot shower considerable receipt of substance in air of the bathing room – in the concentration exceeding average daily maximum concentration limit in atmospheric air is possible. In calculations by the three methods of chloroform doses which can influence the person in living conditions, inhalation receipt was shown to be less if compared with an peroral way (with drinking water) and absorption through skin appear and can make the greatest contribution to the general complex loading of chloroform.

Key words: trihalomethanes in cold drinking and hot water and air of housings; calculation of doses of chloroform in complex receipt in an organism

GS-1302-023

ANALYSIS OF MODERN VIEWS ON THE MIGRATION OF POLYMERIC SUBSTANCES FROM THE PACKAGING INTO THE DRINKING WATER DURING STORAGE AND THEIR INFLUENCE ON LIVING ORGANISMS

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Abstract: The materials in this work are focused on analysis of current ideas regarding migration of polymeric substances from packaging materials to the drinking water during storage and transport. Recently, a large number of studies was devoted to the negative effects of phthalates and bisphenol A (BPA) on living organisms. A lot of evidence of their harmful effects has been accumulated. Negative effects of phthalates and BPA on the reproductive, endocrine and nervous systems have been proved.

Key words: drinking water; the migration of substances from polymers; bisphenol A; phthalates; living organisms; human health

GS-1302-030

SANITARY AND HYGIENIC ASSESSMENT OF WASTE OF SODA PRODUCTION

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Abstract: The object of investigations was soda industry waste. Slimes are formed at slimes storage which occupy considerable areas and are considered to be the source of permanent impact on the hydrosphere objects. Slimes storage placement within settlement boundaries and water protection zone of large watercourses leads to the deterioration of sanitary, hygienic and environmental situation and to the rising of risks to health of communities.

Waste processing with getting new materials on the base of soda industry waste with wide application is seems to be one of the way for problem solving. It is essential to take into account sanitary and hygienic characteristics of slimes within justifying possible directions of its use. Thus, researches concerning assessment of physical, chemical and toxicological waste characteristics are considered to be actual.

The aim of researches is to examine physical, chemical and toxicological characteristics of soda production slimes for justifying directions of its use including delivery of new materials respondent to the all regulatory sanitary and hygienic requirements.

Experimental investigations of assessment physical, chemical and toxicological characteristics of slimes were carried out according to standard methods.

Within assessment of toxicological slimes characteristics the following test-objects were used: Ceriodaphnia affinis, Paramecium caudatum. As a result of investigations watered slime samples were determined to be referred to the 4th hazard level (low-hazard) waste; samples with preliminary mechanical dehydration are referred to the 5th hazard level (practically nonhazardous) waste for environment. These are correspond to the 3rd and 4th hazard level according to sanitary regulations, respectively.

Key words: Sanitary and hygienic assessment; test-objects; physical; chemical and toxicological characteristics; soda industry waste; slimes storage

GS-1302-034

STUDIES OF CELLULAR IMMUNITY IN MEDICAL WORKERS WITH OCCUPATIONAL ASTHMA AND OBSTRUCTIVE BRONCHITIS IN HEALTH CARE INSTITUTIONS OF PRIMORSKY KRAI.

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Abstract: Research was carried out on the basis of voluntary consent to the study of the characteristics of cellular immunity from the blood samples of the medical staff of health institutions of Primorsky Krai suffered from occupational bronchial asthma and obstructive bronchitis. For this purpose, 23 female patients with a diagnosis of occupational asthma, 100 female cases with obstructive bronchitis were examined. Mean age was $47,9 \pm 3,5$ years. The control group was consisted of 30 healthy women, average age of $46,7 \pm 3,7$ years. The aim of our study was to investigate the changes of cellular immunity in health care workers with occupational asthma and obstructive bronchitis. There is an urgent need to study the dynamics of immunogram for proper interpretation and to take measures to prevent complications timely.

Key words: medical staff; immunogram; cellular immunity

GS-1302-036

FEATURES OF THE PSYCHOEMOTIONAL DISORDERS IN PATIENTS DUE TO EXPOSURE TO LOCAL AND GENERAL VIBRATION

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Abstract: Some indices of the psychological status of patients with a vibration disease have been investigated. Significant differences in a psychological condition of patients depending on a type of influencing vibration and a stage of the disease have been revealed.

Key words: vibration disease; psychological features of the personality; alexithymia

GS-1302-039

WORKING CONDITIONS AND PROFESSIONAL RISK FOR OPERATIONAL PERSONNEL OF ENERGY FACILITIES

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Abstract: Features of working conditions and a state of health of operation personnel of the network companies of power industry were studied for the purpose of justification and introduction of preventive actions for the decrease in influence of factors of professional risk.

Key words: operation personnel; working conditions; state of health; professional risk

GS-1302-042

MODERN STRUCTURE OF INCIDENCE RATES OF TUBERCULOSIS IN HEALTH CARE MEDICAL WORKERS IN PRIMORSKY KRAI.

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Abstract: The aim of the study was the analysis of the reasons of occurrence of tuberculosis in the medical personnel of the medical-and-prophylactic organizations carrying out medical activity in Primorsky Krai. During 1996-2011 in phthisiatric establishments professional tuberculosis was recorded in 27,8% of doctors; in 29,1% of nursing personnel; in 31,6% of the medical attendants; in 11,4% of technical staff. In structure of professional infectious diseases pulmonary tuberculosis accounted for 86,8%; tuberculosis of other organs and systems – 13,2%.

Key words: medical personnel; tuberculosis; occupational disease

GS-1302-045

THE USE OF FACTOR ANALYSIS IN DETERMINING THE DIETARY PATTERNS IN THE POPULATION

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Abstract: The possibilities of using one of the methods of multivariate statistics, factor analysis, in the study of the frequency of consumption of food categories for the population are considered. Comparison of the results with the results of other statistical methods (cluster and variance analysis) showed the adequacy of factor analysis in the study purposes.

Key words: nutrition; factor analysis; methods of investigation

GS-1302-048

ORIENTATION OF UNIVERSITY STUDENTS TO SOURCES OF INFORMATION ON RATIONAL NUTRITION

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Abstract: In organization of sanitary education of students on issues of balanced diet it is necessary to be guided on positively perceived sources of information and forms of education. According to our data, the university student editions and health education carried out by doctors of policlinics, providing medical services to the students of the University are of most importance

Key words: students; health education on issues of rational nutrition; information source

GS-1302-052

RATIONAL BALANCED NUTRITION OF SCHOOLCHILDREN OF VARIOUS AGE GROUPS

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Abstract: The problem of nutrition of schoolchildren as the main index of health status is considered. Recommendations for implementation of correction system of school feeding in conditions of Siberia will be presented. The purpose of work: on the basis of the results of monitoring living activity and assessment of the health of schoolchildren of different age groups in Siberia to develop guidelines on the rational balanced nutrition. Studies bear witness to inadequate diet and regimen of feeding of schoolchildren. In Siberia a progressive deterioration in the health of students during the years of learning is observed, part of diseases is associated with an unbalanced diet. We offer the project, in course of realization of which study in schools are carried out, scientifically grounded recommendations on appropriate diet and regimen of feeding for schoolchildren of different age groups in the Siberia in the cold and warm period of the year are developed. Implementation of recommendations will result in the general improvement of children health and reduction in medical aid appealability due to diseases of the gastrointestinal tract.

Key words: health saving technologies; schoolchildren; food technology; Siberia

GS-1302-055

A NEW TYPE OF BREAD IN THE DIET OF HEALTHY AND SICK PERSON

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Abstract: In the study the hygienic assessment of a new type of bread in terms of quality and safety was performed. The results of the study showed that a new type of corn bread has a high nutritive and biological value, it is safe for human health. The glycemic index of bread was determined by the method described by

FAO, WHO in 1998, "Carbohydrates in Human Nutrition." A new type of bread has a low glycemic index. This makes it possible to use the bread in dietary nutrition for persons who are overweight, suffers from the cardiovascular disease and type 2 diabetes, as well as for preventive nutrition for healthy individuals with risk factors for these diseases.

Key words: glycemic index, a new type of bread, food fibers, healthy nutrition, dietary nutrition

GS-1302-058

BIOLOGICAL ADAPTATION OF CHILDREN OF PRESCHOOL AGE WITH RETARDATION OF MENTAL DEVELOPMENT (RMD) IN CONDITIONS OF PRE-SCHOOL CORRECTIONAL EDUCATIONAL INSTITUTIONS.

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Abstract: The present study was devoted to the investigation of biological adaptation of children aged 6-7 years with retardation of mental development (RMD) in pre-school correctional educational institutions. Under supervision there were 69 children, out of them 34 RMD cases and 35 children in whom mental development corresponds to agecontrol group – 35 persons. The increase in sympatico-adrenergic effects and centralized heart rhythm control was revealed in children of both groups under comparison, but in RMD cases these effects were more pronounced. Adaptation reserves in RMD children appeared to be lower than in children in whom mental development corresponds to the age. Gender differences of adaptive reserves in children have been established.

Key words: children, retardation of mental development; biological adaptation.

GS-1302-061

THE HYGIENE OF CLOTHING FOR CHILDREN AND ADOLESCENTS WITH OBESITY ON THE BASIS OF CHARACTERISTICS OF HEAT EXCHANGE

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Abstract: Metabolic syndrome in pediatric and adolescent populations is particularly alarming for its frequent occurrence. Comparative analysis of dimensional typology and percentile values shows exceeding typical dimensional signs. Choosing appropriate clothes feel comfortable for such children is limited

Key words: metabolic syndrome; homeostasis; children; dimensional signs; proportioned clothing

GS-1302-067

MULTIFACTORIAL ANALYSIS OF THE IMPACT OF PESTICIDES ON THE GYNECOLOGIC RATE IN ADOLESCENTS IN THE BELGOROD REGION

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Abstract: In the course of the performed study the significant influence of pesticides introduced into arable farmland, on the frequency of gynecological morbidity in adolescents in 21 districts of the Belgorod region was established. With increasing pesticide load on the soil the prevalence of gynecological pathology in adolescents in rural areas is raising.

Key words: pesticide load, correlation analysis, gynecological disease

GS-1302-071

THE INFLUENCE OF ECOLOGICAL AND SOCIO-BIOLOGICAL RISK FACTORS ON THE COURSE OF FOR PREGNANCY, BIRTH, AND FETAL STATE

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Abstract: The features of prenatal and social history of 857 children in Kirov, as well as indices of aerotechnogenic pollution in the place of their residence have been studied. In the investigated region the existence of ecological (aerotechnogenic pollution) and socio-biological (maternal smoking and psychological trauma) risk factors for prenatal pathologies affecting the mother organism during pregnancy was established. Habitation in this region complicates the course of pregnancy and childbirth (increasing the risk of complicated course of pregnancy and maternity aid), worsens the condition of the fetus (increased risk of neonatal asphyxia) and increases the chance of twins.

Key words: air pollution, the state of the fetus, prenatal period, complications of pregnancy, social factors

GS-1302-074

HYGIENIC STANDARDIZATION OF BIOTECHNOLOGICAL STRAINS IN WATER RESERVOIRS: CURRENT STATE AND PERSPECTIVES

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Abstract: The question of need for standardization and validation of the complex methods to establish the maximum concentration limit (MCL) of biotechnological strains in the water of water bodies is under discussion. On the basis of the experimental studies it has been shown that a unified quantitative criterion for safety could not to be recommended for biotechnological strains and therefore requires the study of each strain in order to substantiate the safe level in water of water bodies.

Proposed biosafety program should include the study of pathogenic properties in acute experiments and specific effects in subchronic experiments to study the influence of strains on the process of water purification and a risk assessment of transformation products of chemicals and the justification of the safety factor when establishing MCL t in terms of the toxic effect.

Key words: biosafety, biotechnological strains, standardization, water of reservoirs

GS-1302-079

USE OF ADVANCES IN FUNDAMENTAL SCIENCE IN THE DEVELOPMENT OF METHODS OF BIOLOGICAL DOSIMETRY OF NITRIC OXIDE (NO) (LITERATURE REVIEW)

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Abstract: The review of the results of fundamental physical, chemical and biological studies proposed to be used in the program for elaboration methods of biological nitric oxide (NO) dosimetry is presented. Particular attention was paid to the structures of dinitrosyl iron complexes (DNIC). The review includes subsection: target of NO in the cell; DNIC function in biology and medicine; DNIC the largest pool of intracellular iron; EPR signal $g = 2,03$ DNIC indicator, and the value of O₂ in the biological activity of DNIC, quantification of nitric oxide. Experimental evidences of the advantages of using EPR spectroscopy of E. coli cells with identification of the value and structure of DNIC signals (signal $g = 2,03$) as a direct method of biological NO dosimetry are presented. The strong emphasis was made on the priority of the Russian School Professor Vanin A. F. (the discovery and study of DNIC) and Academician Aldoshin

S. M. (synthesis and study of crystalline donor NO).

Key words: nitric oxide, biological dosimetry; dinitrosyl iron complexes, EPR spectroscopy.

GS-1302-083

ION-RADICAL OXYGEN SPECIES THE MAIN INDICATOR REFLECTING OF THE ELECTRON- DONATING ABILITY OF WATER

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Abstract: Experimental evidence of the electron – donor ability of drinking water with ion-molecular forms of active oxygen is reported. The concentration limits of the content of peroxide ion radicals (48 mkg /L) in the

absence of molecular hydrogen peroxide in drinking water has been determined. The concentration of the peroxide ion radical in drinking water has been proposed to be used as an index of the water biocatalytic activity

Key words: ion-radicals, phase instability, the quality of drinking water, chemiluminescence

GS-1302-087

ASSESSMENT OF THE RELATIONSHIP OF PROPERTIES OF CHEMICAL COMPOUNDS AND THEIR TOXICITY TO A UNIFIED HYGIENIC STANDARDIZATION FOR CHEMICALS

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Abstract: The connection of thermodynamic properties and parameters of toxicity of chemical substances was determined. Obtained data are used for the evaluation of toxicity and hygienic rate setting of chemical compounds. The relationship between enthalpy and toxicity of chemical compounds has been established. Orthogonal planning of the experiment was carried out in the course of the investigations. Equation of unified hygienic rate setting in combined, complex, conjunct influence on the organism is presented. Prospects of determination of toxicity and methodology of unified hygienic rate setting in combined, complex, conjunct influence on the organism are presented.

Key words: enterprise, irradiation, influence, toxicity, danger, norm.

GS-1302-091

MEDICO-GEOGRAPHICAL ANALYSIS OF THE TERRITORY: THE EXPERIENCE OF RESEARCH IN THE EUROPEAN NORTH OF RUSSIA

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Abstract: Detailed analysis of medical-geographical peculiarities in the regions of the European North of Russia is presented. Medico-geographical characteristics were revealed to impose certain restrictions on the economic development of the region and serve as prerequisites for the occurrence regional pathologies. The importance of such research to identify spatial patterns in changes in health indices in connection with the regional features and landscape-epidemiological situation has been shown. The main factors contributing to the occurrence and development of natural focal diseases caused by feral herd infections in the investigated area have been described.

Key words: medico-geographical studies, the European North of Russia, the landscape and the epidemiological situation, the environment and the health of the population, natural focal diseases, feral herd infections

GS-1302-095

DIAGNOSTICS OF THE PSYCHOPHYSIOLOGICAL STATUS IN PRE-SCHOOL CHILDREN WITH DIFFERENT LEVEL OF ANXIETY ON BASIS OF THE HEART RHYTHM ANALYSIS

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Abstract: The exertion of mechanisms of cardiac rhythm control in the child is determined by the degree of his commitment, the level of claims and anxieties. Unmet needs, reducing the functional state, activate the system of negative emotions that leads to a decrease in motivation in the subject. However, the inclusion of the system of overcoming, i.e. will, can contribute to the successful achievement of the goal.

Key words: boys, children, emotions, anxiety, achievement goal.

GS-1302-099

HYGIENIC SUBSTANTIATION OF MAXIMUM PERMISSIBLE CONCENTRATIONS OF OIL PRODUCTS IN THE SOILS OF THE REPUBLIC OF BELARUS

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Abstract: Oil products are the one out of major pollutants in soil. For reduction of the technogenic load on human beings and performing preventive measures in the Republic of Belarus differentiated hygienic rate setting for oil products in the soil have been scientifically substantiated for follows different categories of Lands: agricultural lands, defense lands, lands for recreation, historical and cultural purpose, forest lands, lands of water fund, reserve lands 50 mg/kg; settlements sand, garden housing and dacha cooperatives, 100 mg/kg; industrial, transport, communication, energy, defense and other appointments lands -500 mg/kg.

Key words: petroleum products, differentiated hygienic standards, landscape-geochemical background, hazard indices

GS-1302-102

METHODOLOGY OF THE DESCRIPTION OF ATMOSPHERIC AIR POLLUTION BY NITROGEN DIOXIDE BY LAND USE REGRESSION METHOD IN EKATERINBURG

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Abstract: This paper provides the description of Land Use Regression (LUR) modeling and the result of its application in the study of nitrogen dioxide air pollution in Ekaterinburg. The paper describes the difficulties of the modeling for air pollution caused by motor vehicles exhaust, and the ways to address these challenges. To create LUR model of the NO₂ air pollution in Ekaterinburg, concentrations of NO₂ were measured, data on factors affecting air pollution were collected, a statistical analysis of the data were held. A statistical model of NO₂ air pollution (coefficient of determination $R^2 = 0.70$) and a map of pollution were created.

Key words: Statistical air pollution models; Land Use Regression model; nitrogen dioxide; autotransport, geoinformational system (GIS)