

The general editorship:

Doctor of Sciences in Physics and Mathematics,

Professor S. A. Maskevich

Candidate of Technical Sciences,

Associate Professor. N. A. Lysukha

Reviewers:

Batyan A. N., Lemeshevsky V. O.,

Mishatkina T. V., Golovaty S. E.

The conference proceedings include the theses submitted at the IXth International scientific conference of young scientists, PhD students, Master`s degree students, and students «Actual environmental problems» in English, which was held in November 21–22, 2019 at the International Sakharov Environmental Institute of Belarusian State University.

The proceedings are referred to a wide range of expert, lecturers of higher and secondary educational establishments, PhD students, Master`s degree students and students.

The conference proceedings are published with the information support
of the Ministry of Education of the Republic of Belarus
and with the financial support of the UNESCO National Project
«School-laboratory for pupils is the instrument for implementing the agenda 2030 in the Republic of Belarus»

THE INFLUENCE OF DIFFERENT TYPES OF CAROTENOIDS ON THE RISK OF NON-HODGKIN'S LYMPHOMA

N. Bushkevich, V. Lemiasheuski

*Belarusian State University, ISEI BSU,
Minsk, Republic of Belarus
bushkevich.tasha@yandex.ru*

The article deals with the study of the influence of carotenoids on the risk of non-Hodgkin lymphoma through meta-analysis of studies and experiments in this area.

Keywords: non-Hodgkin lymphoma, carotenoids, carotene, lutein, carcinogenesis, meta-analysis.

Non-Hodgkin's lymphoma (NHL), a heterogeneous group of malignant neoplasms, is the most common hematological malignant tumor [1]. NHL development is influenced by risk factors such as cigarette Smoking, alcohol use, obesity, and family history of NHL disease[1, 3]. Dietary factors also play a role in the development of the NHL. A recent meta-analysis has shown that consumption of fruits and vegetables significantly reduces the risk of NHL [3]. This is biologically possible due to the antioxidant and anti-carcinogenic properties of vegetables and fruits.

Carotenoids are fat-soluble pigments present in red, yellow, orange and dark green fruits and vegetables [2].

It is assumed that carotenoids protect against carcinogenesis by suppressing the ability of reactive oxygen species to cause DNA damage – an important step in carcinogenesis and neoplastic transformation [2]. In addition, provitamin A carotenoids can be metabolized to retinol, which is important for controlling cell differentiation and proliferation and immunological functions [3].

Several epidemiological studies have reported a relationship between carotenoid consumption and the risk of NHL [1], but the results are inconsistent. Part of the experiments showed a significant protective role of carotenoids against NHL, but the remaining studies did not reveal a relationship [3]. Therefore, a systematic review and meta-analysis of observational studies was conducted to consider the relationship between consumption of certain carotenoids and NHL risk in General.

The meta-analysis included 4,946 cases in which increased intake of alpha-carotene, beta-carotene, and lutein / zeaxanthin was found to be associated with a reduced risk of NHL. Meta-analysis showed that some specific carotenoids (alpha-carotene, beta-carotene and lutein / zeaxanthin) exhibit a protective role against NHL, while others (lycopene and Delta-cryptoxanthin) do not. Apparently, the protective role of a specific carotenoid depends on malignant tumors. For example, alpha-carotene, beta-carotene, and lutein / zeaxanthin protect against breast cancer, beta-cryptoxanthin protects against lung cancer, alpha – carotene and lycopene protects against prostate cancer, and alpha and beta – carotene protects against stomach cancer [1, 2]. Although the underlying mechanisms of divergence of effects on NHL risk among specific carotenoids are unclear, some studies have been conducted by American and Chinese scientists in support of the protective role of individual specific carotenoids [3]. For example, in a cohort study with 301 NHL patients, higher alpha-carotene intake was associated with better overall survival among ever-smokers [2]. An *in vivo* study showed that mice with lymphoma fed beta-carotene supplementation had increased survival, reduced lipid peroxidation, and increased glutathione status [1].

Several restrictive factors should be considered in interpreting the findings. First of all, all studies were conducted in Western countries, which limited the ability to study the potential impact of carotenoid consumption on the risk of NHL in other ethnic groups, such as Asian populations, whose diets tend to differ from the Western population [3]. Secondly, all participants in the studies were women [3]. Some studies did not take into account smoking, alcohol and body mass index, which are considered important factors in this area of study [1, 3]. Final-

ly, in assessing the NHL risk associated with taking a particular carotenoid, none of the included studies took into account the effects of other carotenoids.

Thus, higher intake of alpha-carotene, beta-carotene, and lutein / zeaxanthin, but not lycopene or Delta-cryptoxanthine, is associated with reduced risks of NHL. Further cohort studies are needed to confirm this link.

BIBLIOGRAPHY

1. *Besson, H.* Tobacco smoking, alcohol drinking and non-Hodgkin's lymphoma: a European multicenter case-control study (Epilymph) / H. Besson, , P. Brennan, N. Becker, A. Nieters, S. De Sanjose, Font R, M. Maynadie, L. Foretova, PL. Cocco, A. Staines, M. Vornanen, P. Boffetta // Int J Cancer J Int du cancer. – 2006. – № 119 (4). – P. 901–908. Doi:10.1002/ijc.21913.

2. *Krinsky, N. I.* Carotenoid actions and their relation to health and disease / N. I. Krinsky, , E. J. Johnson // Mol Asp Med. – 2005. – № 26 (6). – P. 459–516. Doi:10.1016/j.mam.2005.10.001.

3. *Siegel, R. L., Jemal A.* Cancer statistics, 2016 / R. L. Siegel, K. D. Miller // CA Cancer J. Clin. – 2016. – № 66(1). – P. 7–30. Doi:10.3322/caac.21332.

CONTENT

SECTION 1 SOCIO-ECOLOGICAL, ETHICAL AND PEDAGOGICAL PROBLEMS OF OUR TIME

PROBLEMS OF MODERN YOUTH AND ADOLESCENTS	3
<i>M. Bogacheva, I. Olevskaya</i>	
RECYCLING AND THE USE OF FOOD WASTE	4
<i>A. Bondar, I. Feshchenko</i>	
DEVELOPMENT PATHS OF PPP PROJECTS ON ROAD CONSTRUCTION IN POLAND AS A PART OF THE SUSTAINABLE ENVIRONMENT.....	5
<i>W. Bugajski</i>	
DEVELOPMENT OF ENVIRONMENTAL LITERACY AMONG THE STUDENTS OF BIOLOGY DEPARTMENT AT THE BELARUSIAN STATE MEDICAL UNIVERSITY	6
<i>A. Butvilovsky, V. Grigorovich, V. Butvilovsky</i>	
THE INFLUENCE OF A LANDSCAPE ON THE PSYCHOLOGICAL STATE OF A PERSON.....	7
<i>N. Darashevich</i>	
ECOLOGY OF COMMUNICATION AND INTERPERSONAL RELATIONSHIP	8
<i>E. Deusova, I. Olevskaya</i>	
LINK BETWEEN FOOD AND ECOLOGY	9
<i>A. Dolhaya</i>	
PSYCHOLOGICAL AND ECOLOGICAL CAUSES OF AGGRESSION IN ADOLESCENTS	10
<i>V. Gamenyuk, I. Olevskaya</i>	
TEACHING BIOLOGICAL AND ECOLOGICAL DISCIPLINES IN ENGLISH AT THE BELARUSIAN STATE MEDICAL UNIVERSITY	11
<i>V. Grigorovich, V. Butvilovsky, A. Butvilovsky</i>	
STUDYING THE FUNDAMENTALS OF ECOLOGY AND FORMATION OF ENVIRONMENTAL LITERACY AMONG THE PRE-UNIVERSITY STUDENTS OF THE EDUCATIONAL INSTITUTION BELARUSIAN STATE MEDICAL UNIVERSITY	12
<i>V. Grigorovich, V. Butvilovsky, A. Butvilovsky, N. Semenenia</i>	
THE IMPACT OF THE ENVIROMENTAL SITUATION ON THE PSYCHOEMOTIONAL STATE OF HUMAN AND SOCIETY ON THE EXAMPLE OF THE CITY OF MINSK	13
<i>L. Hawrilyuk, N. Kononchuk</i>	
ECOLOGICAL AND LEGAL MEASURES OF PREVENTION AND STRUGGLE AGAINST ECOLOGICAL TERRORISM IN FRANCE.....	14
<i>A. Holevo, V. Luchina, T. Belyaeva</i>	
ENVIRONMENTAL THREAT OF USING POLYETHYLENE PACKAGING.....	15
<i>A. Kadeikina</i>	
EVALUATION OF THE ECOLOGICAL CONDITION OF PARKS IN MINSK	16
<i>T. Kapustina, Y. Laikov, E. Zhuk</i>	
ASSESMENT OF ECOLOGICAL LITERACY OF STUDENTS-ECOLOGISTS	17
<i>T. Kapustina, N. Stanishevskaya, E. Zhuk</i>	
ECO-LABELING OF PRODUCTS AS A WAY TO IMPROVE ENVIRONMENTAL AWARENESS	18
<i>I. Kaziuchyts, Y. Dabrahost, Y. Zhuk</i>	
WASTE PAPER COLLECTION AS A PERSPECTIVE BUSINESS	19
<i>P. Khilimonchyk, L. Kuzina</i>	
EVALUATION OF YKSUG STUDENTS AWARENESS LEVEL OF SUSTAINABLE DEVELOPMENT GOALS	20
<i>I. Kolesnik</i>	

PROSPECTS FOR THE DEVELOPMENT OF THE CIRCULAR ECONOMY	21
<i>K. Kot, L. Kuzina</i>	
PROBLEMS OF GREEN CHEMISTRY EDUCATION AROUND THE WORLD	22
<i>A. Liavontsyeu, T. Savitskaya</i>	
ENVIRONMENTAL POLLUTION: LEGAL ASPECT	23
<i>D. Litvinchuk</i>	
PROFESSIONAL SELF-DETERMINATION OF STUDENTS AND THE ROLE OF BIOLOGY IN THE PROCESS OF PERSONALITY FORMATION	24
<i>Y. Marchenko, Yu. Lyakh</i>	
WORLD EXPERIENCE IN MUNICIPAL SOLID WASTE RECYCLING	25
<i>E. Maslyukov, L. Kuzina</i>	
FEATURES OF THE PEDAGOGICAL SUPPORT OF ELDERLY PEOPLE IN THE SYSTEM OF CONTINUOUS EDUCATION.....	26
<i>L. Mayor</i>	
SENIOR PUPILS DEVELOPMENT OF RATIONAL NATURAL RESOURCES CONSUMPTION	27
<i>Y. Mikheyeva, Z. Minaycheva, M. Yasaite</i>	
DEVELOPMENT CONSTRAINTS OF MEDICAL SERVICES' EXPORT OF THE REPUBLIC OF BELARUS	28
<i>K. Morozova</i>	
ECOLOGICAL AND SOCIAL CONSEQUENCES OF OVERPOPULATION.....	29
<i>A. Osipchik</i>	
SEIZING BLUE BIOECONOMY OPPORTUNITIES: REVIEW OF DEVELOPMENTS IN SUSTAINABLE FOOD SOLUTIONS	29
<i>A. Pakseresht, M. Rashidghalam</i>	
HOMELESS ANIMALS AS ENVIRONMENTAL PROBLEM OF THE CITY OF ZHODINO. POSSIBILITIES OF SOLVING THIS PROBLEM.....	30
<i>L. Pavlovets</i>	
OVERVIEW OF ACHIEVING SOME SDG 9 INDICATORS IN RUSSIA: THE DYNAMICS OF CARBON DIOXIDE EMISSION PER ADDED VALUE UNIT	31
<i>E. Pomogalova</i>	
SHOPPING BAGS, PLASTIC OR PAPER: IS THERE A GENERATION GAP IN ATTITUDES?	32
<i>A. Ryklina</i>	
IMPACT OF GOVERNMENT AND INTERNATIONAL ORGANIZATIONS ON FOOD SECURITY IN POLAND	33
<i>T. Slapczynski</i>	
MOBILE LEARNING AS A WAY TO INCREASE THE EFFECTIVENESS OF THE CLASSICAL EDUCATIONAL PROCESS	34
<i>N. Smolnik</i>	
IMPACT OF THE NATURAL ENVIRONMENT ON HUMAN HEALTH AND LIFE – SUICIDOLOGICAL APPROACH TO THE PROBLEM.....	35
<i>M. Stradomska</i>	
ASSESSMENT OF ADAPTATION OPPORTUNITIES OF UNIVERCITY GRADUATES.....	35
<i>N. Tarasevich</i>	
SCHOOLCHILDREN’S ECOLOGY OF MOTIVATION.....	36
<i>A. Trifonova</i>	
BIOETHIC ANALYSIS OF COMMUNICATION BETWEEN DOCTOR AND PATIENT DURING DIAGNOSTIC, TREATMENT AND FORECAST IN WOMEN WITH BREAST CANCER IN UZBEKISTAN	37
<i>N. Umirzakova, Z. Mukhamedova</i>	
CORRELATION BETWEEN ALCOHOL FACTOR AND SOME SOCIAL AND ECONOMIC INDICATORS	38
<i>E. Vasyukevich, K. Cherepovich, E. Zhivitskaya</i>	
TO THE HISTORY OF THE FORMATION OF ANTHROPOLOGICAL SCIENCE IN BELARUS	39
<i>V. Vinnikava</i>	

INNOVATIVE EDUCATIONAL ENVIRONMENT IN THE FIELD OF JURISPRUDENCE	40
<i>V. Yakubovskaya</i>	
ENVIRONMENTAL COMPETENCE DEVELOPMENT OF SENIOR PUPILS IN EXTRACURRICULAR ACTIVITIES THROUGH RESEARCH PROJECTS	41
<i>M. Yasaite, O. Chruschchova</i>	
PUBLIC OPINION ABOUT BASIC TRENDS IN THE FUEL AND ENERGY SPHERE.....	42
<i>L.Yatskoyskaya, A. Korotkevich</i>	
HYPERCONSUMPTION AS A SOCIO-ECOLOGICAL PROBLEM	43
<i>K. Zhuravlev, Y. Mukhlynkina</i>	

SECTION 2 MEDICAL ECOLOGY

PHENOTYPIC CHARACTERISTICS OF PERIPHERAL BLOOD LYMPHOCYTE SUBPOPULATIONS IN PATIENTS WITH CHRONIC GLOMERULONEPHRITIS.....	45
<i>A. Abdul, M. Yurkevich</i>	
RAPID THREE-STEP METHOD FOR HEPATOCYTES ISOLATION WITHOUT PERFUSION	46
<i>P. Alchovik, M. Labai, D. Nizheharodava, M. Yurkevich</i>	
ANALYSIS OF PHYSIOLOGICAL AND PATHOPHYSIOLOGICAL ROLE OF COMPLEMENT SYSTEM IN CONDITIONS OF CHRONIC INFECTIOUS-INFLAMMATORY PROCESS	47
<i>K. Alisevich, T. Romanovskaya</i>	
MOLECULAR BIOLOGICAL SUBTYPES OF BREAST CANCER	48
<i>I. Andreeva, O. Boyarin</i>	
STUDY OF REACTIONS OF HUMAN SOMATIC CELLS TO THE EFFECT OF ADVERSE FOCAL POINTS OF EXTERNAL ENVIRONMENT	49
<i>O. Arkadiev</i>	
EVALUATION OF QUALITATIVE AND QUANTITATIVE APPROACH OF PCR METHOD IN EARLY DETECTION OF HPV	50
<i>L. Astrouskaya, E. Tarasova</i>	
TOXICOLOGICAL EVALUATION OF EPICUTANEOUS EFFECT, INHALATION OF HEXYL ESTER OF 5-AMINOLEVULINIC ACID AND ITS REGULATION.....	51
<i>M. Atroshko, E. Vlasenko</i>	
TOXICOLOGICAL EVALUATION OF LOCAL IRRITATING EFFECT AND APPLICATION TO MUCOUS MEMBRANES OF THE EYES OF HEXYL ESTER OF 5-AMINOLEVULINIC ACID AND ITS REGULATION.....	52
<i>M. Atroshko, E. Vlasenko</i>	
ANALYSIS OF HUMAN CHORIONIC GONADOTROPIN USING HIGH-RESOLUTION TANDEM MASS-SPECTROMENRY	53
<i>D. Babaryko, I. Hulyta, Y. Bakakina, V. Syakhovich</i>	
THE FEATURES OF AP ₄ A IMPACT ON ADP-INDUCED PLATELET AGGREGATION IN PREGNANT WOMEN WITH PRE-ECLAMPSIA	54
<i>A. Bakunovich, K. Bulanava</i>	
SYNTHETIC ANALOGS OF NATURAL PHENOLIC ANTIOXIDANTS AND ANTIMUTAGENS FROM RASPBERRY AND GINGER	55
<i>M. Bandarenko</i>	
EPIDEMIOLOGICAL ANALYSIS OF THE INCIDENCE AND THE PREVALENCE OF MENTAL DISORDERS IN THE REPUBLIC OF BELARUS FROM 2010 TO 2017 YEAR.....	56
<i>K. Bartosh, I. Lazar</i>	
THE RESEARCH OF THE MICROELEMENT DISTURBANCE IN OSTEOARTHRITIS	57
<i>N. Bashura, V. Koktysh</i>	

ANTIOXIDANT ACTIVITY OF THE EXTRACTS OF CHESTNUT FLOWERS (<i>AESCULUS HIPPOCASTANUM</i> L.), ROWAN (<i>SORBUS AUCUPARIA</i> L.), ACACIA (<i>ACACIA</i>) AND DIFFERENT TYPES OF LILAC (<i>SYRINGA</i>).....	58
<i>D. Baskina, E. Tarun, D. Shkurko, P. Kurchenko</i>	
EFFECTS OF NITROGENOUS BASE ANALOGUES AND NUCLEOSIDES IN TUMOR CELLS.....	59
<i>V. Boldyrava, A. Sysa</i>	
BIOTECHNOLOGICAL PRODUCTION OF 5'-PHOSPHATIDYL-6-THIO-2'-DEOXIGUANOSINE	60
<i>S. Bruyakin, L. Birichevskaya, A. Zinchenko</i>	
THE INFLUENCE OF DIFFERENT TYPES OF CAROTENOIDS ON THE RISK OF NON-HODGKIN'S LYMPHOMA	61
<i>N. Bushkevich, V. Lemiasheuski</i>	
GENDER AND AGE SPECIFIC FEATURES OF THE CIRCULATORY SYSTEM DISEASES OF THE POPULATION IN MINSK REGION	62
<i>V. Cheplya</i>	
CREATION OF GENETIC CONSTRUCTION CARRYING XANTHOSINE PHOSPHORYLASE GENE	63
<i>A. Daineko, A. Bulatovski, I. Kazlouski, A. Zinchenko</i>	
THYROID MALIGNANT TUMORS INCIDENCE IN MINSK AND MINSK REGION IN 2007–2016.....	64
<i>E. Dovydenko, M. Sinelyova</i>	
ANALYSIS OF CHEMICALLY MODIFIED HEMOGLOBIN USING PROTEOMIC METHODS.....	64
<i>D. Efimovich, D. Babaryko, E. Ruta-Zhukouskaia, V. Syakhovich</i>	
BIOLOGICALLY ACTIVE ACTION OF AMINO ACIDS AND THEIR APPLYING IN THE CLINIC	65
<i>O. Glazko</i>	
THE PREVALENCE OF MALIGNANT NEOPLASMS OF THE DIGESTIVE SYSTEM IN THE POPULATION OF THE REPUBLIC OF BELARUS.....	66
<i>A. Grigorovich, M. Sinelyova</i>	
MOLECULAR GENETIC DIAGNOSTICS AS A METHOD FOR DETERMINING THE CARRIAGE OF BACTERIAL PATHOGENS INFECTIONS INTO WILD WATERFOWL BIRDS	67
<i>A. Grinek, A. Tchaikovsky</i>	
ENVIRONMENTAL IMPACT ON MENTAL HEALTH	68
<i>T. Gromova, N. Kozelko</i>	
THE DOSE ESTIMATION WITH A VARIABLE OF FRACTIONATION SCHEME OF THE RADIOTHERAPY COURSE	68
<i>K. Hancharova, A. Haida, V. Zorin</i>	
ASSESSMENT OF ENVIRONMENTAL STATUS IN OVERWEIGHT INDIVIDUALS	69
<i>A. Hussein Ali, L. Loseva, T. Krupskaya</i>	
PERIPHERAL BLOOD MEMORY T-CELLS SUBPOPULATIONS IN PATIENTS WITH SECONDARY COMPLICATIONS IN CHRONIC HCV INFECTION.....	70
<i>U. Ivuts, S. Lykashik, M. Zafranskaya</i>	
CHARACTERISTICS OF $\Gamma\Delta$ T-LYMPHOCYTES IN PATIENTS WITH HEPATITIS C VIRUS INFECTION	71
<i>A. Kalacheva, S. Lukashyk, D. Nizheharodava</i>	
DEPENDENCE OF THE PTV VOLUME ON THE NUMBER OF NEEDLES DURING HDR BRACHYTHERAPY FOR POSTATE CANCER	72
<i>D. Kazlouski, A. Plyshevskaya, Y. Kazlouskaya</i>	
IMPACT OF 3-HYDROXYPYRIDINE DERIVATIVES ON CYTOSTATIC AND ANTIPROLIFERATIVE ACTIVITY OF ARABINOFURANOSYLCYTOSINE-5'-MONOPHOSPHATE	74
<i>M. Khanchevskii, E. Deusova</i>	
ANALYSIS OF PRIMARY INCIDENCE OF ALL FORMS OF ACTIVE TUBERCULOSIS AMONG RESIDENTS OF DIFFERENT DISTRICTS OF MINSK.....	75
<i>A. Khrustalyova, V. Litvyak, T. Opanasenko</i>	
SMALL NON-CODING RNA AS BIOMARKERS IN OSTEOARTHRITIS	76
<i>I. Koktysh, P. Zhurko</i>	

INTERPRETATION OF ELISA RESULTS IN THE DIAGNOSIS OF THE HERPES VIRUS.....	77
<i>J. Kostina, E. Tarasova</i>	
ANALYSIS OF THE LEVEL OF PHYSICAL AGGRESSION IN TEENAGERS DEPENDING ON THE CHOICE OF A COMPUTER GAME.....	77
<i>N. Kozelko</i>	
PECULIARITIES OF MENTAL HEALTH OF POPULATION AFFECTED BY ECOLOGICAL DISASTERS	78
<i>M. Kraevich</i>	
RESEARCH OF MICROBIAL COMMUNITIES USING ENVIRONMENTAL INDEXES	79
<i>N. Kravets, I. Grod, L. Shevchyk, L. Romanyuk, I. Antonyshyn</i>	
DEVELOPMENT OF AN INTERACTIVE METHODOLOGICAL GUIDE ON HISTOLOGY USING COMPUTER TECHNOLOGIES IN THE ISEI BSU.....	81
<i>A. Kunkevich, O. Lozinskaya</i>	
INFLUENCE OF THE MINERAL COMPOSITION OF WATER ON HUMAN HEALTH	82
<i>M. Kurilyak</i>	
THE CARCINOGENIC EFFECT OF BENZAPIRENE AS A SUBSTANCE IN THE COMPOSITION OF EXHAUST GASES OF CARS	82
<i>M. Kurilyak</i>	
EXCESS AND LACK OF FLUORINE IN DRINKING WATER AS THE BASIS OF PATHOLOGICAL CHANGES IN THE ORGANISM.....	83
<i>M. Kurilyak</i>	
THE EFFECT OF CULTURE FLUID AND STRUCTURAL COMPONENTS OF MICELIUM PHALLUS IMPUDICUS L. ON THE PROLIFERATIVE ACTIVITY OF LYMPHOCYTES.....	84
<i>M. Labai, N. Ikonnikova, A. Lobatyuk, M. Karaman, J. Marić, M. Rakić</i>	
LYMPHOCYT-STIMULATING ACTIVITY OF HUMAN PERIPHERAL BLOOD MONONUCLEARS IN THE PRESENCE OF PHALLUS IMPUDICUS L EXTRACTS	85
<i>M. Labai, N. Ikonnikova, M. Karaman, J. Marić</i>	
SYNTHESIS OF 5-HYDROXY-11-(2-HYDROXYPHENYL)-3,3-DIMETHYL-1,2,3,4,5,11- HEXAHYDROINDENO[1,2-B]QUINOLINE-1,10-DIONE	86
<i>V. Leshok, I. Hulyta, A. Pyrko</i>	
STRUCTURE AND MAIN TENDENCIES OF PRIMARY MORBIDITY OF THE POPULATION OF THE REPUBLIC OF BELARUS	87
<i>C. Levchik, E. Zhivitskaya</i>	
STATE OF ALCOHOL DEPENDENCE PROBLEM IN MINSK AND MINSK REGION.....	88
<i>A. Lukashevich, E. Snytkov, S. Melnov, A. Zhilach</i>	
CONIINE, PHYSICO-CHEMICAL PROPERTIES AND ITS APPLICATION IN THE ENVIRONMENTAL INDUSTRY.....	89
<i>Y. Luksha, S. Shahab, M. Sheikhi</i>	
ANTIOXIDANT ACTIVITY CHARACTERISTICS OF THE GANODERMA LU-CIDUM SPOROCARPS EXTRACT	90
<i>A. Lyamtseva, A. Chubarova</i>	
HEALTH STATUS OF THE POPULATION OVER THE WORKING AGE IN THE TERRITORY OF THE REPUBLIC OF BELARUS	91
<i>D. Makarevich, A. Chernetskaya</i>	
POPULATION FREQUENCIES OF MINOR CONGENITAL DEFORMITIES	92
<i>T. Makey, A. Ershova-Pavlova, N. Kokorina</i>	
ESTIMATION OF BODY'S REACTIVITY TO THERAPY IN PATIENTS WITH ULCER OF THE STOMACH BY CELL INDICATORS OF PERIPHERAL BLOOD.....	93
<i>J. Maksimchik, K. Shpadaruk</i>	
ANALYSIS OF THE PREVALENCE OF DIGESTIVE DISEASES AMONG THE POPULATION OF THE REPUBLIC OF BELARUS	94
<i>V. Mantivoda, M. Sinelyova</i>	
RETROSPECTIVE ANALYSIS OF TUBERCULOSIS INCIDENCE IN MINSK REGION (2012–2017).....	95
<i>S. Marshalkovich, M. Dubina, I. Chmara</i>	

POSSIBILITIES OF THE MICRONUCLEUS TEST IN DETERMINATION OF MUTAGENIC PRESSURE OF ENVIRONMENTAL FACTORS ON THE HUMAN BODY	96
<i>E. Matoshko</i>	
COMPARATIVE ANALYSIS OF THE INDICATORS OF ONCOLOGICAL MORBIDITY AND MORTALITY AMONG URBAN AND RURAL POPULATION OF THE REPUBLIC OF BELARUS	97
<i>E. Matoshko</i>	
ANALYSIS OF CRITERIA FOR EVALUATING THE DOSE TO THE HEART DURING RADIATION THERAPY TREATMENT PLANNING FOR BREAST TUMORS USING RESPIRATORY GATING	98
<i>M. Mayorava, E. Titovich, M. Piatkevich, A. Kaprusynka, V. Loika, N. Makarava</i>	
ANALYSIS OF SENSITIVITY TO ANTIBIOTICS OF PROBIOTIC STRAINS OF LACTIC ACID BACTERIA	99
<i>N. Mazanik, E. Gritskevich</i>	
ANALYSIS OF DIAGNOSTIC VALUE OF POPULATION AND SUBPOPULATION STRUCTURE OF LYMPHOCYTES IN NORMAL AND HIV-INFECTION CONDITIONS	100
<i>E. Mezin, T. Romanovskaya</i>	
PATHOLOGICAL ROLE OF AUTOPHAGY IN OSTEOARTHRITIS	101
<i>V. Miralau, I. Koktysh</i>	
GESTOSIS AS PATHOLOGICAL CONDITIONS OF THE SECOND HALF OF PREGNANCY	102
<i>Y. Nechayeva, N. Kozelko</i>	
ANALYSIS OF STOLIN DISTRICT THYROID DISEASES INCIDENCE IN 2013–2017	103
<i>A. Nikonchik, N. Porada</i>	
IRON DEFICIENCY ANEMIA AMONG PREGNANT WOMEN OF VARIOUS AGES	104
<i>M. Novickaya, L. Blinyaeva</i>	
PROGNOSTIC SIGNIFICANCE OF MOLECULAR BIOLOGICAL SUBTYPES OF BREAST CANCER	104
<i>A. Prokopuk, E. Shpadaruk, I. Andreeva</i>	
ANTIBIOTIC RESISTANCE – A MODERN GLOBAL CHALLENGE FOR HUMAN HEALTH	105
<i>L. Romanyuk, N. Kravets, S. Klymnyuk</i>	
THE EFFECT OF THE WEATHER ON PERSON'S MOOD. IS THERE INTER CONNECTION?	107
<i>O. Sakalovich</i>	
HYGIENIC ASSESSMENT OF DRINKING WATER SUPPLY OF THE BREST REGION (2007–2017)	108
<i>M. Seledchik, M. Dubina</i>	
EVALUATION OF THE ROLE OF CYTOLOGICAL STUDIES IN VETERINARY DERMATOLOGY	109
<i>A. Semak, Y. Lyakh</i>	
THE IMPACT OF METABOLIC PROCESSES DISORDERS ON THE HOMEOSTASIS IN THE BODY CELLS	110
<i>T. Semeenko, A. Ivashkevich, I. Puhteva, N. Gerasimovich</i>	
ANALYSIS OF THE INCIDENCE OF THE POPULATION IN THE REPUBLIC OF BELARUS WITH HIV INFECTION IN THE PERIOD FROM 2006 TO 2016	111
<i>Y. Sergeeva, N. Porada</i>	
MODIFICATIONS OF THE NERVOUS SYSTEM IN RATS AFTER PROTON IRRADIATION	112
<i>Y. Severiukhin, M. Lalkovicova, E. Ignat, F. Orzan, E. Pristavka, P. Parmon</i>	
DISORDERS OF CALCIUM ION EXCHANGE IN HUMAN BODY AT VARIOUS FORMS OF ARTHRITIS	113
<i>D. Shaforenko, I. Puhteva</i>	
THE EFFECTS OF MICROORGANISMS AS BIOSTIMULANTS ON VEGETATION GROWTH IN CHANGING ENVIRONMENTAL CONDITIONS IN EGYPT AND BELARUS	114
<i>E. Shavalda, Sh. Khalifa</i>	
MONITORING OF POST-VACCINAL IMMUNITY AMONG THE PRESCHOOL-AGED CHILDREN OF MINSK	115
<i>M. Shevtsov</i>	

ANTIOXIDANT ACTIVITY OF VARIOUS SPECIES OF LILAC (SYRINGA) BARK EXTRACTS.....	116
<i>D. Shkurko, E. Tarun, E. Kravchenya, V. Kurchenko</i>	
ROLE OF GARDNERELLA VAGINALIS IN THE PATHOGENESIS OF BACTERIAL VAGINOSIS.....	117
<i>D. Sinenok, E. Tarasova, V. Pajitok</i>	
SYNTHESIS, ABSORPTION AND FLUORESCENCE SPECTRA OF 10-HYDROXYDECAHYDROACRIDIN-1,8-DIONE DERIVATIVE.....	118
<i>M. Smolnik, V. Leshok, A. Pyrko</i>	
SYNTHESIS AND ANTIOXIDANT ACTIVITY OF TETRACYCLIC COUMARINE DERIVATIVE.....	119
<i>M. Smolnik, E. Tarun, A. Pyrko</i>	
COMPARISON OF IMRT AND VMAT METHODS WITH ACTIVE BREATHING COORDINATOR AND WITHOUT USING RADIATION OF STOMACH CANCER.....	120
<i>N. Sribnaya</i>	
MEDICINAL PLANTS AND THEIR BACTERICIDAL ACTION.....	121
<i>A. Stasevich</i>	
DNA VACCINES: MECHANISM OF ACTION, PERSPECTIVES OF USING.....	121
<i>M. Statsi, M. Mikulich, I. Koktysh,</i>	
PIZOOTIC MEASURES AS A FACTOR FOR PREVENTION OF INFECTIOUS DISEASES AMONG THE INHABITANTS OF MINSK ZOO.....	122
<i>N. Strigelskaya, Y. Lyakh</i>	
ANTIOXIDANT ACTIVITY OF NEW SYNTHESIZED PYRIMIDINE DYES.....	123
<i>A. Strogova</i>	
CHEMILUMINESCENT ACTIVITY OF RAT PERITONEAL MACROPHAGES.....	124
<i>A. Svirskaya, A. Dubko, D. Nizheharodava</i>	
ANALYSIS OF CESIUM-137 ACCUMULATION IN VEGETABLES AND MILK IN MINSK REGION.....	125
<i>E. Svito, V. Kravchenko</i>	
VERIFICATION OF THE MULTIMODAL TREATMENT PLAN ABSORBED DOSE AT REFERENCE POINT VALUE AS A MEAN OF ASSESSING THE QUALITY OF DYNAMIC RADIATION THERAPY PROVIDED.....	126
<i>E. Titovich, V. Loika, S. Laskovets, M. Piatkevich</i>	
USE OF STEM CELLS IN ONCOHEMATOLOGY.....	128
<i>V. Tyshkevich, I. Puhteva</i>	
SOCIO-ECOLOGICAL MONITORING AS AN INDICATOR OF ECOLOGICAL CONSCIOUSNESS.....	129
<i>A. Verbitskaya, N. Kozelko</i>	
COMPLEMENT SYSTEM AS A BIOMARKER OF CARDIOVASCULAR DISEASES.....	130
<i>T. Volodashchik</i>	
ECOLOGICAL FEATURES OF CONTRAST DYE USING IN X-RAY PATHOLOGY DIAGNOSTICS.....	131
<i>I. Voropanov, V. Lemiasheuski</i>	
DRD2 GENE AS A MARKER OF STRESS-RESISTANCE.....	132
<i>E. Yanchuck, I. Mosse, I. Drozdov</i>	
STEM CANCER CELLS AS A SOURCE OF MALIGNANT NEOPLASMS.....	133
<i>E. Yankovskaya</i>	
PROGNOSTIC ROLE OF ESTROGEN AND PROGESTERONE RECEPTORS IN THE TREATMENT OF BREAST CANCER.....	134
<i>K. Yurchenkova, E. Shpadaruk, I. Andreeva</i>	
ANTIOXIDANT ACTIVITY OF DAIRY MIXTURES FOR CHILD NUTRITION.....	135
<i>M. Yushkevich, E. Tarun</i>	

SECTION 3
PROBLEMS OF MODERN ENVIRONMENTAL SAFETY
(BIOMONITORING, BIOINDICATION, BIOREMEDIATION,
RADIOECOLOGY AND RADIATION SAFETY, ENVIRONMENTAL MONITORING,
MANAGEMENT AND AUDIT. INFORMATION SYSTEMS
AND TECHNOLOGIES IN ECOLOGY)

PATTERNS OF CADMIUM AND LITHIUM IONS EFFECT ON YEAST CELLS.....	137
<i>A. Afonin, E. Lyapunova, L. Komarova</i>	
INFLUENCE OF MACHINE-BUILDING ENTERPRISES ON SOIL CONTAMINATION.....	138
<i>A. Aleinikova, S. Golovaty</i>	
CHEMICAL MIXING SYSTEM	139
<i>A. Astreyko, I. Lefanova</i>	
QUANTUM-CHEMICAL CALCULATIONS OF NEW AZOMETHINE COMPOUNDS WITH ANTIOXIDANT ACTIVITY	140
<i>M. Atroshko</i>	
INFLUENCE OF THE KOPYL BRANCH OF OJSC “SLUTSK CHEESE-MAKING PLANT” ON THE MAZHA RIVER.....	141
<i>A. Barkovskaya, M. Kalinin</i>	
THERMAL RESOURCES OF CLIMATE OF BELARUS AND THEIR APPLICATION IN “GREEN” ENERGY INDUSTRY	142
<i>M. Barushka</i>	
RATIONING AND CONTROL OF SKIN, HANDS AND FEET IRRADIATION	143
<i>Y. Blagodarova, N. Tushin</i>	
ETHICAL ASPECTS OF RADIOLOGICAL PROTECTION	144
<i>A. Brinkevich, N. Tushin, G. Belkov</i>	
ASSESSMENT OF THE ENVIRONMENTAL SITUATION IN THE PORT CITIES OF NSR.....	145
<i>P. Chepliaeva</i>	
THEORETICAL MODEL OF PHYSISORPTION EFFECT OF CO ON CONIINE AND FURANOCOUMARINS FOR AIR PURIFICATION	146
<i>V. Cheplya, S. Shahab, M. Murashko</i>	
EFFECTIVENESS OF PRENATAL DIAGNOSTICS OF CONGENITAL DEVELOPMENT DISORDERS IN THE REPUBLIC OF BELARUS ACCORDING TO THE DATA OF THE BELARUSIAN REGISTER.....	146
<i>S. Chirlina, A. Ershova-Pavlova, N. Kokorina</i>	
ASSESSMENT OF RADIOACTIVE IMPACT ON INDIVIDUAL OBJECTS OF THE BIOTA ON THE LEVEL OF CONTAMINATION IN DIFFERENT TYPES OF LAKES	147
<i>A. Chuholskiy, M. Pashuk</i>	
DESIGN AND DEVELOPMENT OF AN AIRCRAFT-BASED MODULAR SYSTEM FOR COLLECTING METEOROLOGICAL DATA	149
<i>R. Donchukov, T. Smirnova</i>	
QUANTUM-CHEMICAL CALCULATION AND SYNTHESIS OF NEW ANTHRAQUINONE COMPOUNDS FOR BIOLOGICAL APPLICATIONS.....	150
<i>M. Drachilovskaya</i>	
SIMULATION OF INTERACTION OF HIGH ENERGY PROTON BEAM WITH HEAVY TARGETS	151
<i>A. Dubrouski, A. Kiyavitskaya</i>	
THE USE OF INFORMATION TECHNOLOGY IN THE SALE OF FORESTRY PRODUCTS OF THE GRODNO SIFA.....	152
<i>A. Dumcheva, A. Karpei</i>	
OPTIMIZATION OF RADIATION PROTECTION AT NPP. ALARA PROCEDURE AND EXAMPLES OF ITS PRACTICAL APPLICATION.....	153
<i>A. Dvorakovskiy, N. Tushin</i>	

ESTIMATION OF HEAVY METAL SOIL POLLUTION IN THE IMPACT AREA OF A CEMENT ENTERPRISE USING THE METHOD OF X-RAY FLUORESCENCE SPECTROSCOPY	154
<i>K. Dybchik, E. Samusik</i>	
PREVENTION OF POLLUTION WITH HEAVY METALS OF HYDROECOSYSTEMS – ONE OF THE WAYS IN REALIZATION OF SUSTAINABLE DEVELOPMENT	155
<i>L. Fedoniuk, O. Skyba</i>	
USE OF SPECTRAL REFLECTANCE METHOD FOR MONITORING OF PLANT TRAITS AND DROUGHT STRESS EFFECTS IN WHEAT	156
<i>A. Filaček, M. Barboričová</i>	
FORMATION, ACCUMULATION AND DISPOSAL OF POLYMER WASTE IN THE REPUBLIC OF BELARUS	157
<i>I. Gerasimchuk, S. Golovaty</i>	
SYSTEM OF AUTOMATIC MICROCLIMATE CONTROL AND REGULATION IN A ROOM	158
<i>A. Golubovich, I. Lefanova</i>	
RGB-HSV CONVERTER IN COMPUTER VISION SYSTEMS	159
<i>E. Grinevich, I. Lefanova, T. Belyaeva</i>	
FREQUENCIES OF COLORING PHENOTYPES OF SYNANTHROPIC URBAN PIGEON (<i>COLUMBA LIVIA F. URBANA</i>) IN REGIONAL CITIES OF BELARUS	160
<i>I. Handogiy</i>	
APPLICATION PROSPECTS OF ELECTRONIC PORTAL IMAGING DEVICE FOR THE PRE-TREATMENT VERIFICATION IN N. N. ALEXANDROV NATIONAL CANCER CENTRE OF BELARUS	161
<i>E. Holdman, E. Titovich</i>	
TOTAL BODY IRRADIATION WITH VOLUMETRIC MODULATED ARC THERAPY: DOSIMETRIC DATA AND FIRST PRE-TREATMENT EXPERIENCE	162
<i>E. Holdman, E. Titovich</i>	
ANALYSIS OF SECONDARY RAW MATERIAL EXTRACTION IN THE US, THE RUSSIAN FEDERATION AND THE REPUBLIC OF BELARUS	163
<i>A. Holevo, V. Misuchenko, T. Belyaeva</i>	
THE GERMAN ENERGY TRANSITION (ENERGIEWENDE): ORIGINS, CURRENT SITUATION AND PUBLIC OPINION IN THE FEDERAL REPUBLIC OF GERMANY	165
<i>L. Hrytsai</i>	
INTERNATIONAL APPROACHES TO ASSESSMENT OF EXPOSURE DOSE TO POPULATION DUE TO DISCHARGES FROM NUCLEAR POWER PLANTS INTO WATER BODIES	166
<i>D. Huseinava</i>	
ARE INSTITUTIONAL CHANGE AND THE IMPLEMENTATION OF THE ECOSYSTEM APPROACH SUCH STRANGE BEDFELLOWS? A CASE STUDY OF HELCOM AND THE BALTIC SEA ACTION PLAN	167
<i>S. Jetoo, N. Tynkkynen</i>	
FOREST ECOSYSTEMS' IMPACT ON THE CARBON BALANCE	167
<i>V. Kankova, I. Narkevitch</i>	
RESPONSIBLE CHOICE OF LIGHT BULBS EQUALS HELP TO NATURE AND MEN	168
<i>R. Karnatsevich, I. Karnatsevich</i>	
THE STUDY OF THE OPTICAL PROPERTIES OF BLOOD IN THE CONDITIONS OF A LABORATORY WORK IN MEDICAL PHYSICS	169
<i>E. Kemes, N. Pushkarev</i>	
USING NEAR INFRARED SPECTROSCOPY TO DETERMINE THE SCOTS PINE PLACE OF GROWTH	171
<i>A. Khokh</i>	
BETULA PENDULA ROTH POLLEN AS A BIOINDICATOR OF THE POLLUTION DEGREE IN URBAN AREAS	172
<i>A. Khokh</i>	

COMPARATIVE ANALYSIS OF THE ANATOMOMETRIC INDICATORS OF SCOTS PINE NEEDLES IN DIFFERENT TYPES OF FORESTS	173
<i>A. Khokh</i>	
IMPLEMENTATION OF BIOTEST ORGANISMS OF DIFFERENT TROPHIC LEVELS IN SAFETY OF WASTEWATER BAKERY	174
<i>I. Kondratenko, V. Tarantsov</i>	
ANALYSIS OF ANTHROPOGENIC INFLUENCE ON THE ENVIRONMENTAL COMPONENTS DURING THE DEVELOPMENT OF CONIFEROUS OIL DEPOSIT IN THE TOMSK REGION	175
<i>U. Kucheryavchenko</i>	
CONTENT ASSESSMENT OF INORGANIC SUBSTANCES IN THE AMBIENT AIR OF THE STERLITAMAK CITY IN 2010–2012	176
<i>E. Kulakova, A. Safarov</i>	
CONTENT ESTIMATION OF ORGANIC SUBSTANCES IN THE AMBIENT AIR OF THE STERLITAMAK CITY IN 2010–2012	177
<i>E. Kulakova, A. Safarov</i>	
BIOINDICATION AS THE BASIC METHOD OF ANALYSIS OF THE ECOLOGICAL CONDITION OF THE DISTRICTS OF MINSK	178
<i>T. Kulesh, A. Makarevich, I. Andronchik</i>	
GAMMA-RAY BURST AS POSSIBLE CAUSE OF LATE ORDOVICIAN MASS EXTINCTION	179
<i>V. Kutas, O. Boyarkin</i>	
WETLAND BIRDS OF MINSK AS A POTENTIAL FOCUS OF CERCARIOSIS	180
<i>O. Lazavy, A. Khandohiy, K. Gomel</i>	
METHOD DEVELOPMENT FOR DETERMINATION OF PHARMACEUTICAL WASTE IN WATER BY UV-VIS SPECTROSCOPY	181
<i>E. Lobova, E. Pytlyak, T. Chikova, N. Savastenko</i>	
QUANTUM-CHEMICAL CALCULATION OF ANTIOXIDANT PROPERTIES OF SULFORAPHANE.....	182
<i>V. Makeichyk</i>	
REDEVELOPMENT AND THE ENVIRONMENTAL COMPONENT OF SECURITY	183
<i>D. Maksimoutsou</i>	
REGENERATION IN CULTURE OF REMONTANT RASPBERRY LEAVES EXPLANTS	184
<i>A. Maksimuk</i>	
INFLUENCE OF COPPER-CONTAINING FERTILIZERS ON CROP GROWTH AND DEVELOPMENT IN THE EARLY STAGES OF GROWTH.....	185
<i>N. Markiyanchik</i>	
FEATURES OF BIOLOGICAL DEGRADATION OF COMPOSITE POLYMERIC MATERIALS	186
<i>A. Melnikova, V. Orekhova, L. Komarova</i>	
CURRENT ASSESSMENT OF THE SHENFLIZ POND CONDITION IN 2018–2019 (KALININGRAD)	187
<i>A. Menshenin, N. Tsoupikova</i>	
ENGINEERING OF A GENETIC CONSTRUCTION CONTAINING A KERATINASE GENE FROM BACILLUS LICHENIFORMIS	188
<i>J. Mironova, I. Kazlouski, A. Zinchenko</i>	
CALCULATION AND EXPERIMENTAL STUDY OF BORIC ACID SOLUBILITY IN STEAM AT BOILING	189
<i>A. Morozov, A. Sakhipgareev, A. Shlepkin</i>	
ENVIRONMENTAL PROBLEMS RELATED TO MULTILAYERED PACKAGING WASTE.....	190
<i>T. Mumladze; A. Šteiniūtė; G. Denafas</i>	
QUANTITATIVE DETERMINATION OF THE SOAP CONTENT OF NATURAL WATERS.....	191
<i>N. Nekhan, V. Zhylko</i>	
POSSIBLE CONSEQUENCE OF ACCUMULATING OF AMERICIUM-241 IN POLESYE STATE RADIATION-ECOLOGICAL RESERVE.....	192
<i>E. Nikitin, T. Dashkevich, T. Kovaleva</i>	

RADIO FREQUENCY TECHNOLOGY: GENERAL AND THEORETICAL INFORMATION.....	193
<i>I. Pasechnik, Y. Zhynko, K. Verlamov</i>	
PRE-SEEDING SEED TREATMENT IN ELECTRIC FIELD	194
<i>V. Pashynski, P. Velichko</i>	
SPECTROSCOPIC STUDIES (GEOMETRY OPTIMIZATION, E → Z ISOMERIZATION, UV/VIS, EXCITED STATES, FT-IR, HOMO-LUMO, FMO, MEP, NBO) OF NEW AZOMETHINE STRUCTURES FOR BIOLOGICAL AND BIOCHEMICAL APPLICATIONS.....	196
<i>A. Pazniak, S. Shahab, M. Sheikhi, L. Filippovich</i>	
DEVELOPMENT OF METHODOLOGICAL RECOMMENDATIONS FOR THE ESTABLISHMENT OF PHYSICAL AND TECHNICAL SUPPORT FOR EXTERNAL RADIATION THERAPY PROCEDURES.....	197
<i>M. Piatkevich, N. Makarava, E. Titovich, V. Malishevskiy</i>	
DEVELOPMENT OF METHODOLOGICAL RECOMMENDATIONS REGULATING THE SELECTION OF EXTERNAL BEAM RADIATION THERAPY TECHNIQUE AND PARAMETERS OF TREATMENT PLANNING.....	198
<i>M. Piatkevich, N. Makarava, E. Titovich, V. Malishevskiy, M. Mayorava</i>	
DEVELOPMENT OF DOCUMENTATION ON WASTE MANAGEMENT FOR ENTERPRISE JSC “ECOVER PRO”	199
<i>A. Pinchuk, V. Misiuchenko</i>	
ASSESSMENT OF SOIL POLLUTION BY VARIOUS POLLUTANTS IN THE INFLUENCE ZONE OF PETROCHEMICAL ENTERPRISES.....	200
<i>T. Podolinskaya, S. Golovaty</i>	
POSITRON EMISSION TOMOGRAPHY VISUALIZATION PROCESS	201
<i>O. Popchenya</i>	
CHARACTERISTICS TO BE MONITORED ON PET/CT	202
<i>O. Popchenya</i>	
REQUIREMENTS FOR THE POSITRON-EMISSION TOMOGRAPHY COMBINED WITH THE X-RAY COMPUTER TOMOGRAPH.....	203
<i>O. Popchenya</i>	
PHOTODEGRADATION OF CAFFEINE OVER PLASMA TREATED ZNO-BASED CATALYSTS DOPED WITH Ag NANOPARTICLES	204
<i>E. Pytlyak, E. Lobova, A. Shcherbovich, N. Savastenko</i>	
ASSESSMENT OF POLLUTION SOURCES AND SURFACE WATER QUALITY IN MINSK	205
<i>K. Rabychyn, U. Kapitsa</i>	
INVESTMENT ATTRACTIVENESS OF AGRICULTURE OF PAKISTAN.....	206
<i>I. Rasheed, I. Paska</i>	
APPLICATION OF UV SPECTROPHOTOMETRY IN ANALYSIS OF MEDICINES	207
<i>N. Rodishevskiy</i>	
BIOMONITORING AS A METHOD FOR ASSESSING THE TOXICITY OF THE ENVIRONMENT OF URBAN ECOSYSTEMS.....	208
<i>Ye. Rogachko, I. Kovalenko</i>	
STABILITY OF COMPOSITE LANDSCAPE COMPLEXES: MODEL FORMALIZATION.....	209
<i>M. Ruda, T. Boyko</i>	
TO THE QUESTION OF DIFFERENTIATED RATING OF THE CONTENT OF CHEMICAL ELEMENTS IN SOILS OF BELARUS.....	210
<i>E. Savon, S. Savchenko, S. Golovaty</i>	
THE POSSIBILITY OF REGULATING THE SEED GERMINATION OF WHEAT CULTIVAR VASILISA BY TREATMENT WITH EPIBRASSINOLIDE AND WITH A 150 mMOL NaCl BACKGROUND	211
<i>A. Semeniuk</i>	
FEATURES OF APPLICATION OF THE AMDAHL’S LAW AND THE GUSTAFSON – BARSIS’S LAW FOR THE EVALUATION OF THE MAXIMUM SPEEDUP OF COMPUTATIONS IN FORECASTING OF RADIONUCLIDE’S SPATIAL MIGRATION IN NATURAL DISPERSE ENVIRONMENT.....	212
<i>P. Shalkevich, S. Kundas</i>	

EFFECTS OF CURRENT ECOLOGICAL FACTORS ON PINUS SYLVESTRIS IN THE "BELOVEZHSKAYA PUSHCHA" NATIONAL PARK.....	213
<i>E. Shavalda, E. Buško</i>	
NANOSPHERES DOPED WITH QUANTUM DOT AND PHOTOCHROMES.....	214
<i>A. Shcherbovich, P. Karpach</i>	
CHANGES IN THE ENVIRONMENTAL SITUATION IN THE VOLGA REGION FROM 2000 TO 2016	215
<i>Y. Shelkov</i>	
SUBSTRATE CREATION FROM SEWAGE SLUDGE FOR BIOLOGICAL SOIL REMEDIATION.....	216
<i>O. Shkvirko, I. Tymchuk, M. Malovanyy</i>	
ANALYSIS OF LEGISLATIVE DOCUMENTS OF THE EUROPEAN UNION AND THE REPUBLIC OF BELARUS IN THE FIELD OF WASTE MANAGEMENT	217
<i>A. Shlyahunova, V. Misiuchenka</i>	
CURRENT DETECTOR	218
<i>A. Shmarlovsky, D. Belozеров</i>	
APPLICATION OF METHODS OF RADIONUCLIDE DIAGNOSTICS USING «DECLIPSESPECT» NAVIGATION DISTRIBUTION SYSTEM FOR SURGICAL PURPOSES	219
<i>D. Shpak, T. Chikova</i>	
STATISTICAL ANALYSIS OF QUALITY OF TREATMENT OF CERVICAL CANCER BY METHOD OF COMBINED RADIATION THERAPY IN STATE INSTITUTION "N. N. ALEXANDROV NATIONAL CANCER CENTER OF BELARUS".....	220
<i>I. Shturo, T. Chikova</i>	
STATE OF RADIOACTIVE POLLUTION OF WATERBODY ECOSYSTEMS OF THE CHERNOBYL EXCLUSION ZONE BY BASIC DOSE-FORMING RADIONUCLIDES.....	221
<i>H. Skibinskaya, T. Dashkevich</i>	
DEVELOPMENT OF THE «DETERMINATION OF SPECIFIC ACTIVITY OF ORGANICALLY BINDED TRITIUM IN WATER» PROJECT METHODOLOGY	222
<i>H. Skibinskaya, V. Mironov</i>	
STUDY OF STABILITY OF AN IMMOBILIZED LIPASE RHIZOPUS JAPONICUS IN THE HYDROLYSIS OF HYDROGENATED FAT.....	223
<i>V. Skliar, G. Krusir</i>	
RESEARCH OF THE INFLUENCE OF THE BAIKAL EM ON THE COMPOSTING OF FOOD MIXTURE.....	224
<i>V. Sokolova, G. Krussir, I. Kuznecova</i>	
RESISTANCE OF LAKES OF BELARUS TO EUTROPHICATION IN THE CONDITIONS OF VARIABLE CLIMATE	225
<i>N. Sukhovilo</i>	
RECOGNITION OF OBJECTS BASED ON THE COMPUTER VISION SYSTEM ON RASPBERRY PI.....	226
<i>S. Tkachenko</i>	
PHYSICS OF SEMICONDUCTOR DETECTORS	227
<i>S. Tsypko</i>	
METHODS FOR NO _x MEASUREMENT IN EXHAUST FROM AIRCRAFT ENGINES AT CIVIL AIRPORTS	228
<i>K. Ulianova, K. Synlo</i>	
POTENTIALITIES OF REAGENT PURIFICATION OF POLLUTED INDUSTRIAL WASTEWATERS	229
<i>A. Yakimenko</i>	
INTELLIGENT MONITORING	230
<i>S. Yakshovich, D. Piatnitsa, L. Lipnitskiy</i>	
APPLICATION OF ELECTRIC ENERGY STORAGE DEVICES IN ELECTRIC SYSTEMS WITH RENEWABLE ENERGY SOURCES.....	231
<i>P. Yatsko, V. Krasovsky</i>	

ECOLOGICAL SIGNIFICANCE OF WHITE MISTLETOE (<i>VISCUM ALBUM L.</i>).....	232
<i>V. Yurel</i>	
DISTRIBUTION OF WHITE MISTLETOE (<i>VISCUM ALBUM L.</i>) IN THE CENTRAL PART OF THE REPUBLIC OF BELARUS	233
<i>V. Yurel</i>	
APPROACHES TO CALCULATION OF WATER USE FOR ENTERPRISES OF DAIRY INDUSTRY	234
<i>P. Zakharko</i>	
HEAVY METAL HYPERACCUMULATORS AND THE DEVELOPMENT OF URBAN SOIL REMEDIATION STRATEGIES	235
<i>Y. Zhuravkov, R. Bondarchik, V. Kovaliov, N. Goncharova</i>	
WIND ENERGY DEVELOPMENT IN REPUBLIC OF BELARUS.....	236
<i>F. Zianiutsich, T. Kazakevich</i>	
EXOSKELETON.....	237
<i>I. Kirukhin, V. Krasovsky</i>	
INTERNET MARKETING IN SOCIAL NETWORKS	238
<i>I. Kirukhin, N. Lepskaya</i>	
ECOLOGY OF PYRAMIDAL STRUCTURES	238
<i>A. Khamitsevich, V. Krasovsky</i>	
THE PROBLEM OF THE INFLUENCE OF ALTERNATIVE ENERGY SOURCES: ECOLOGY AND MAN	240
<i>A. Khamitsevich, N. Lepskaya</i>	

Научное издание

АКТУАЛЬНЫЕ ЭКОЛОГИЧЕСКИЕ ПРОБЛЕМЫ

ТЕЗИСЫ IX МЕЖДУНАРОДНОЙ НАУЧНОЙ КОНФЕРЕНЦИИ
МОЛОДЫХ УЧЕНЫХ, АСПИРАНТОВ, МАГИСТРАНТОВ, СТУДЕНТОВ
21–22 ноября 2019 г.
г. Минск, Республика Беларусь

На английском языке

Редакторы *Т. В. Беляева, Н. Н. Довгулевич, Т. И. Жегало,
Л. М. Корневская, Т. А. Лавринович, Н. М. Левданская, Я. И. Мистюкевич,
Л. Н. Никитина, Е. И. Суббота, Г. В. Третьяк*
Компьютерная верстка *А. В. Красуцкая*

Подписано в печать 14.11.2019. Формат 60×90 1/8.
Бумага офсетная. Печать цифровая.
Усл. печ. л. 31,75. Уч.-изд. л. 24,46.
Тираж 200 экз. Заказ №56

Республиканское унитарное предприятие «Информационно-
вычислительный центр Министерства финансов Республики Беларусь».
Свидетельство о государственной регистрации
издателя, изготовителя, распространителя печатных изданий
№ 1/161 от 27.01.2014, № 2/41 от 29.01.2014.
Ул. Кальварийская, 17, 220004, г. Минск.