

The general editorship:

Doctor of Sciences in Physics and Mathematics,
Professor Sergei Maskevich
Candidate of Technical Sciences, Associate professor
Maria Germenchuk

Reviewers:

Anatoly Batyan, Sergei Golovatiy, Victoria Luchina

The conference proceedings include the theses submitted at the XIth International scientific conference of young scientists, PhD students, Master`s degree students, and students «Actual environmental problems» in English, which was held in December 2–3, 2021 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 financial and 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»

ANALYSIS OF ANTIBACTERIAL ACTIVITY OF CYTIDINE 3',5'-CYCLIC MONOPHOSPHATE IN *PROTEUS MIRABILIS*

A. Shihad, A. Sysa, E. Gritskevitch

Belarusian State University, ISEI BSU

Minsk, Republic of Belarus

arshedalmansori@gmail.com

The incidence of antibacterial resistance is on continued rise with a threat to return to the “pre-antibiotic” era. This has led to emergence of such bacterial infections, which are essentially untreatable by the current armamentarium of available treatment options. Various efforts have been made to develop the newer antibacterial with novel modes of action, which can act against these multi-drug resistant strains. Modified nucleotides are one of the important drugs class from an antibacterial perspective. A pharmacologically diverse class of drugs that arose from chemically modified natural ribose or 2'-deoxyribose nucleosides.

Keywords: cytidine 3',5'-cyclic monophosphate, *Proteus mirabilis*, 2', 7'-dichlorodihydrofluorescein diacetate.

The appearance of anti-infection agents had further developed humankind's wellbeing status and personal satisfaction colossally. Notwithstanding, abuse and abuse of anti-infection agents had brought about expanded turn of events and event of bacterial opposition against industrially accessible anti-toxins. Hence, the quest for novel anti-microbials of normal starting points, especially from marine assets and plants has been attempted industriously. One of the promising classes of antimicrobial mixtures are subordinates of the parts of nucleic acids: nucleosides, nucleotides, just as their analogs. These atoms are engaged with an enormous number of organic cycles, including, for instance, the capacity of hereditary data, quality articulation, energy digestion and cell flagging. These cycles are essential for all living life forms, including microbes. Nucleoside analogs are perhaps the main classes of drug utilized in the center. The most well-known utilization of nucleoside analogs as antiviral and antitumor specialists. Notwithstanding, as of late there is something else and more information on their viability against microorganisms [1].

A natural side effect of aerobic respiration is the production of reactive oxygen species (ROS). These ROS are generated via successive single-electron reductions and can damage DNA, proteins and lipids, ultimately leading to cell death. To protect themselves against the deleterious effects of ROS, aerobic bacteria are equipped with enzymes (catalases and superoxide dismutases) that can detoxify ROS and regulatory mechanisms (SoxRS, OxyRS, and SOS regulons) to counter the damage. Interestingly, in 2007 Kohanski et al. identified a common mechanism involving the production of hydroxyl radicals by which all bactericidal antibiotics could induce cell death. Currently, a mechanism is proposed in which bacterial membrane disturbance triggers envelope stress and subsequent perturbation of the Arc regulatory system accelerates respiration [2]. Hyperactivation of the electron transport chain induces the formation of superoxide and hydrogen peroxide which damage iron-sulphur clusters, thereby releasing ferrous iron. This iron can then react with hydrogen peroxide in the Fenton reaction and generate hydroxyl radicals which can directly damage DNA, lipids and proteins or oxidize the deoxynucleotide pool and indirectly damage DNA. However, this theory has recently become the subject of much debate. A major point of criticism is the use of hydroxyphenyl fluorescein as a stain to demonstrate ROS production, although various studies have used other direct (chemiluminescence, electron paramagnetic resonance (EPR)) or indirect methods (quantification of protein carbonylation or expression of proteins involved in antioxidant strategies) to confirm production of ROS. Moreover, it was found that protection against ROS has a positive effect on bacterial cell survival not only after treatment with oxidizing agents but also after treatment with antibiotics [3]. Most studies investigating the contribution of ROS in antibiotic-mediated killing have focused on planktonic cultures, but cells in a biofilm may respond differently. For example, for *Pseudomonas aeruginosa* biofilms higher bactericidal concentrations were needed to induce ROS production compared to planktonic cultures, and it has been shown that ciprofloxacin only induces oxidative stress in planktonic *Proteus mirabilis* cells but not in biofilms. ROS production most likely contributes to antibiotic-mediated killing, but the extent depends on the specific conditions. Hence, differences in experimental procedures could be at the basis of the conflicting results reported in literature [4].

To determine whether antibiotics induce the generation of ROS in *Proteus mirabilis* species we used fluorescent reporter dye, 2', 7'-dichlorodihydrofluorescein diacetate (H2DCFDA) and, to directly measure ROS production. These dyes have already been used in previous studies, but their use has recently been the subject of considerable debate. In the present study we investigated whether they can be used to measure ROS production in *Proteus mirabilis* bacteria [5].

In the present study direct and indirect methods to measure the production of ROS in *Proteus mirabilis* upon exposure to antibiotics were compared. Both planktonic and biofilm cultures were studied and antibiotics belonging to different classes (H2DCFD) were included.

Our results highlight some methodological key issues to be considered when evaluating the contribution of ROS in antibiotic mediated killing. Since not a single ideal method could be identified, we recommend to evaluate different methods. Whether or not increased ROS production is measured, is highly dependent on the antibiotics used and the species tested, and even varies between biofilms and planktonic cultures. However, more sensitive and specific methods are needed to obtain a complete understanding of the exact role of ROS in antibiotic mediated killing and to investigate whether the production of ROS is biologically relevant.

REFERENCES

1. *Imlay JA*, Superoxide production by respiring membranes of *Escherichia coli* / *Fridovich I* // *Free radic Res Commun*, 1991;12–13 Pt 1:59–66.
2. *Wang X*, Contribution of oxidative damage to antimicrobial lethality/ *Zhao X* // *Antimicrob Agents Chemother*. 2009;53(4):1395–402. pmid:19223646
3. *Kohanski MA*, A common mechanism of cellular death induced by bactericidal antibiotics /*Dwyer DJ* /*Hayete B* / *Lawrence CA* /*Collins J* // *J.Cell* 2007;130(5):797–810.
4. *Kohanski MA*, of membrane proteins and two-component system activation trigger antibiotic-mediated cell death /*Dwyer DJ* / *Wierzbowski J* / *Cottarel G* / *Collins J* // *J. Mistranslation Cell*. 2008;135(4):679–90.
5. *Liu Y*, Cell death from antibiotics without the involvement of reactive oxygen species / *Imlay JA*. // *Science* (New York, NY). 2013;339(6124):1210–3/

CONTENT

SECTION 1

SOCIO-ECOLOGICAL, ETHICAL AND PEDAGOGICAL PROBLEMS OF OUR TIME

THE IMPACT OF PSYCHOLOGY AND BIOLOGY ON THE IDENTITY CRISIS OF ADOLESCENCE.....3	
<i>E. Akshevskaya, A. Kozorez, I. Olevsknaya</i>	
POSTHUMANISM: ALTERNATIVE REALITIES AND ARTIFICIAL INTELLIGENCE IN GREG EGAN'S SCIENCE FICTION.....4	
<i>I. Boyarkina</i>	
SCHOOL ENVIRONMENTAL EDUCATION IS THA BASIS OF ENVIRONMENTAL EDUCATION5	
<i>G. Bunel, O. Davydova-Loiko</i>	
PROBLEMS OF INTRODUCTION OF CIRCULAR ECONOMY IN BELARUS6	
<i>L. Chayka, L. Kuzina</i>	
THE IMPACT OF FOOD WASTE ON THE ENVIRONMENT7	
<i>D. Chkurakova, L. Kuzina</i>	
IFFERENCES IN THE VERBAL DEFINITION OF THE CHARACTERISTICS OF THE ECOLOGICAL QUALITY OF PRODUCTS IN SOME LANGUAGES AS A BASIS FOR THE UNIFICATION OF THEIR ENVIRONMENTAL LABELING.....8	
<i>V. Gudovich, A. Fralou</i>	
ROLE OF AN ACTIVE LIFESTYLE ON HUMAN PHYSICAL HEALTH9	
<i>O. Hadasevic</i>	
INFLUENCE OF STRESS ON MENTAL AND PHYSICAL HEALTH OF THE HUMAN.....10	
<i>I. Olevskaya, R. Kazakov</i>	
TECHNOLOGY OF MANUFACTURING ORGANIC CARDS IN SECONDARY EDUCATIONAL INSTITUTION11	
<i>N. Kirchuk</i>	
ESG PRINCIPLES AS THE MAIN COMPONENT OF THE STRATEGY OF A MODERN COMPANY.....12	
<i>M. Kirikovich, O. Moyseenok</i>	
ENVIRONMENTAL IDEAS OF THE PHILOSOPHY OF TAOISM13	
<i>D. Kolesnikovich, N. Lepskaya</i>	
CONSUMING SOCIETY13	
<i>A. Korotkevich, A. Budko</i>	
THE PROBLEM OF EXPIRED DRUGS14	
<i>Y. Kuratnik, L. Kuzina</i>	
BRAIN CAPACITY OF YOUNG BASKETBALL PLAYERS IN TRAINING AND COMPETITIVE ACTIVITIES15	
<i>M. O. Lashchevskaya, N. A. Buzlyakov, I. Z. Olevskaya</i>	
PSYCHOPHYSIOLOGICAL STATE OF HEALTH OF THE RESIDENTS OF MODERN MEGAPOLISES IN THE CONDITIONS OF URBANIZATION.....16	
<i>V. Luchina, V. Sivukha</i>	
THE MAIN PROBLEMS OF INVASIVE ANIMAL SPECIES IN BELARUS17	
<i>E. Makarevich, I. Khandohiy</i>	
FACTORS OF TOURISM DEVELOPMENT – DIVERSITY AND CLASSIFICATION18	
<i>A. Makavitski</i>	
DEVIANT BEHAVIOR IN ADOLESCENTS19	
<i>A. Melnichonok, S. Pekarskaya, I. Olevskaya</i>	
THE PSYCHOLOGY OF STRESS20	
<i>D. Mozheiko, D. Zhukouskaya, I. Olevskaya</i>	
ECONOMIC ASPECTS OF THE IMPLEMENTATION OF ORGANIC AGRICULTURE IN THE REPUBLIC OF BELARUS.....21	
<i>A. Nazarovich</i>	

INSTRUCTIONAL DESIGN: THE ESSENCE OF THE ISSUE.....	22
<i>A. Osinovskaya</i>	
DEVELOPMENT OF A BICYCLE ROUTE PROJECT IN BARANOVICH DISTRICT AS A WAY TO IMPROVE TOURISTIC AND RECREATION POTENTIAL.....	23
<i>A. E. Rasskazova</i>	
INFLUENCE OF HYPOTHYROIDISM ON HUMAN MENTAL HEALTH.....	24
<i>D. Sikita, A. Derachits, I. Olevskaya</i>	
PSYCHOLOGICAL FEATURES OF PANIC DISORDER.....	25
<i>L. A. Sultanova , I. Z. Olevskaya</i>	
THE PROBLEM OF INFLATED EXPECTATIONS.....	26
<i>V. Timchenko, M. Yakauleva</i>	
PROBLEMS OF ECOLOGICAL CONSCIOUSNESS AND BEHAVIOR OF STUDENTS.....	27
<i>A. Vabishchevich, T. Kapustina</i>	
ENVIRONMENTAL EDUCATION OF SCHOOLCHILDREN WITHIN THE FRAMEWORK OF THE ACADEMIC SUBJECT "MAN AND THE WORLD"	28
<i>S. Vergeichik, E. Zhuk</i>	
EXPERIENCE IN ORGANIZING DISTANCE LEARNING STUDENTS	29
<i>A. Yatskovskaya, D. Churakova, T. Kapustina E. Zhuk</i>	
"GREEN ECONOMY" IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT	29
<i>A. Yatskovskaya, L. Kuzina</i>	

SECTION 2 MEDICAL ECOLOGY

THE EFFECT OF SOME MONOSACCHARIDES ON INSULIN FIBRILLATION	31
<i>V. Abakumets, R. Baranovskiy, N. Bogdanova, K. Bulanova</i>	
THE RARE MUTANTS OF BARLEY PRODUCED IN CONDITIONS OF MOUNTAINS.....	32
<i>I. Abdulov, I. Amanturtiev</i>	
THE EFFECT OF ANTIMICROBIAL THERAPY OF ORAL MUCOSA IN NORMAL AND PATHOLOGICAL CONDITION.....	32
<i>Abdulrazzak Mohammad Sabah Abdulrazzak, N. Ikonnikova</i>	
THE ANALYSIS OF THE POSSIBILITIES OF ACCUMULATION OF ALUMINUM IONS BY ERYTHROCYTES AND LYMPHOCYTES OF HUMAN PERIPHERAL BLOOD	33
<i>P. Adashova, A. Skorobohatova, E. Slobozhanina, E. Smirnova</i>	
EFFECT OF HELMAR 1 POLYPHENOL EXTRACT ON GLUTATHIONE PEROXIDASE ENZYME ACTIVITY IN RAT LIVER MITOCHONDRIA IN TOXIC HEPATITIS	34
<i>S. Ahmedova, M. Asrarov, S. Mirzakulov, M. Pozilov</i>	
IMPORTANCE OF MEDICAL ECOLOGY IN THE RECOVERY PERIOD FROM COVID-19.....	35
<i>G. Akhmedova, B. Zaripov, B. Kakhorov</i>	
INTERACTION BETWEEN NANOTUBE (8,10) AND RESVERATROL.....	37
<i>A. Augustinovich</i>	
DETERMINATION OF THE CONTENT OF ZINC IONS IN THE BLOOD IN PREECLAMPSIA.....	38
<i>R. Baranovsky, A. Zhiv, K. Bulanova</i>	
ANALYSIS OF LONG-TERM DYNAMICS OF CAUSES OF MORTALITY OF THE POPULATION OF THE REPUBLIC OF BELARUS.....	39
<i>A. Bobrova, N. Porada</i>	
INFLUENCE OF BONE MARROW – DERIVED MULTIPOTENT MESENCHYMAL STROMAL CELLS ON THE PROLIFERATIVE POTENTIAL OF LEUKEMIA K562 CELL LINE	40
<i>V. Bondarenko, M. Yurkevich</i>	
RETROSPECTIVE ANALYSIS OF THE INCIDENCE OF CIRCULATORY SYSTEM DISEASES OF ADULT POPULATION OF CHASHNIKI REGION IN 2015–2019.....	41
<i>E. Bulyno, A. Sysa</i>	
ASSESSMENT OF THE EFFECT OF CO ₂ ON THE LEVEL OF SORPTION OF FURANOCOUMARINS.....	42
<i>V. Cheplya, S. Shahab</i>	

CREATION OF A GENETIC CONSTRUCT CARRYING THE DNA POLYMERASE GENE OF THE BACTERIOPHAGE <i>PHI29</i>	43
<i>V. Chichina, A. Bulatovsky</i>	
MODERNIZATION OF THE EQUIPMENT OF THE RADIOLOGICAL DEPARTMENT OF THE STATE INSTITUTION «N. N. ALEXANDROV NATIONAL CANCER CENTRE OF BELARUS»	44
<i>I. Chirkova, T. Chikova</i>	
MODERN HIGH-TECH EQUIPMENT OF THE RADIOLOGY DEPARTMENT OF THE STATE INSTITUTION «N. N. ALEXANDROV NATIONAL CANCER CENTRE OF BELARUS».....	45
<i>I. Chirkova, T. Chikova</i>	
CHANGES IN THE CONTENT OF LPO PRODUCTS IN A RAT LIVER MITOCHONDRIA OF THE "RAPID AGING" MODEL AND THE EFFECT OF SUPROMOLECULAR COMPOUNDS ON THEM	46
<i>S. Dalimova, Sh. Kuziev, G. Umarova, G. Mukhammadjanova, M. Yunusova, N. Khamdamova, S. Khamroev, M. Mustafakulov, D. Azimova</i>	
STUDY OF CARDIOPROTECTIVE PROPERTIES SUPRAMOLECULAR COMPOUNDS WITH GLYCIRRIZIC ACID	46
<i>S. Dalimova, M. Yunusova, G. Umarova, Sh. Kuziyev, G. Mukhamadjonova, N. Khamdamova, S. Khamroyev, M. Mukhamedova, M. Dadakhonova</i>	
SYNTHESIS OF TRIOL N-METHYLMORPHOLINO INOSINE.....	47
<i>E. Deusova, M. Khanchevskiy, V. Pashkovich, E. Kvasyuk</i>	
EPIDEMIOLOGICAL ANALYSIS OF THE INCIDENCE OF THE POPULATION OF THE KRUPSKY DISTRICT WITH RESPIRATORY DISEASES FOR 2014–2019	48
<i>K. Dragun, A. Sysa</i>	
GENES OF SEROTONINEGIC SYSTEM AND ITS INFLUENCE ON HUMAN PSYCHOEMOTIONAL STATE.....	49
<i>I. Drozdov, I. Mosse</i>	
EXPLORING THE POSSIBILITIES OF CREATING A GENETIC CONSTRUCT FOR A DNA VACCINE AGAINST SARS-COV-2.....	50
<i>A. Dubinskaya, I. Kazlovsky, J. Venskaya</i>	
FUNCTIONAL ACTIVITY OF NEUTROPHILS IN FUNGAL DISEASES OF NAILS, SKINHAND MUSCOUS MEMBRANES	51
<i>N. V. Emelianenko, T. R. Romanovskaya</i>	
ANTITUMOR ACTIVITY OF ZOLEDRONIC ACID	52
<i>V. Gamenyuk, M. Khancheuski, M. Labai</i>	
ANALYSIS OF INCIDENCE AND TERRITORIAL DISTRIBUTION OF INFECTIOUS MONONUCLEOSIS IN BELARUS	53
<i>V. Garonina, Yu. Lyakh</i>	
THE IMMUNE SYSTEM DURING PHYSICAL ACTIVITY	54
<i>B. Kakhorov, M. Khojamkulova</i>	
PHYSICAL SORPTION OF 6-THIO-2-DESOXYGUANOSINE AND 6-METHYL-2-ETHYL-PYRIDIN-3-OL WITH NANOTUBE CNT (10,10-8)	55
<i>R. Kazakov, M. Khancheuski, S. Shahab, L. Filippovich</i>	
PREVALENCE OF CONGENITAL DEFECTS IN THE DEVELOPMENT OF THE MAXILLOFACIAL REGION	56
<i>V. Kazyuchits, N. Kokorina, A. Ershova-Pavlova</i>	
PHYSIOLOGICAL ALTERATIONS OF MITOCHONDRIA UNDER DIABETES CONDITION AND ITS CORRECTION BY POLYPHENOL GOSSITAN	57
<i>Sh. Khalilov, M. Pozilov, U. Gayibov, X. Ruziboyev, M. Asrarov, N. Abdulladjanova</i>	
ENZYMATIC SYNTHESIS OF 6-THIOGUANOSINE	58
<i>M. Khancheuski, L. Birichevskaya, A. Bulatovski, A. Trifonova, A. Zinchenko</i>	
ELISA DIAGNOSTICS OF CORONAVIRUS INFECTION.....	59
<i>P. S. Khariton, E. E. Tarasova, N. S. Khariton</i>	
EFFECT OF INORGANIC POLYPHOSPHATES AND ADP ON THE ACTIVITY OF ENDOPLASMATIC RETICULUM CALCIUM ATPASE.....	60
<i>F. Khasanov, A. Baev, S. Dalimova</i>	

COMPARATIVE ANALYSIS OF THE ANOMALIES OF THE STRUCTURE OF THE ANNUAL SCOTS PINE LAYERS IN DIFFERENT FOREST TYPES	61
<i>A. Khokh</i>	
VARIABILITY OF LATE AND EARLY WOOD CONTENT IN THE ANNUAL SCOTS PINE LAYER UNDER ANTHROPOGENIC LOAD	62
<i>A. Khokh</i>	
STUDY OF THE INFLUENCE OF POLYCATION POLYELECTROLYTES ON THE STATE OF IMMUNOGLOBULIN IMMOBILIZED ON NANOSTRUCTURED SILVER FILMS	63
<i>I. Koktysh, Ya. Melnikova, T. Pitsko (Kaluhina), O. Matusevich, S. Maskevich</i>	
ASSESSMENT OF BIOLOGICAL PROPERTIES OF SPECIES <i>Achillea L.</i> PERSPECTIVE FOR THE PRODUCTION OF DERMATOLOGICAL AND COSMETOLOGICAL PREPARATIONS	64
<i>A. Kolos</i>	
NEUROPROTECTIVE EFFECTS OF METABOLIC ACTIVATED MITOPHAGY FOR THE PATIENT'S WITH HEREDITARY FORMS OF PARKINSON'S DISEASE.....	65
<i>Nafisa R. Komilova¹, Zuhra Ya. Kuchkarova², Ulugbek Z. Mirkhodjaev</i>	
RELATION OF THE ACTIVITY OF THE COMPLEMENT SYSTEM AND THE LEVEL OF ANTICLEBSIELOUS ANTIBODIES IN ADULTS	66
<i>A. Kostyuk, T. Romanovskaya</i>	
ANTIBIOTIC RESISTANCE IN LACTOBACILLUS, BIFIDOBACTERIUM AND BACILLUS.....	67
<i>K. Kot</i>	
ANALYSIS OF THE INCIDENCE OF ALCOHOLISM AND ALCOHOLIC PSYCHOSES IN THE REPUBLIC OF BELARUS.....	67
<i>E. Kozlova, N. Gerasimovich</i>	
THE EFFECT OF VITAMIN D ON THE DEVELOPMENT OF TYPE 2 DIABETES MELLITUS	68
<i>D. Kozlovich, N. Bogdanova</i>	
ECOLOGICAL AND SOCIAL FACTORS AS A CAUSE OF MULTIPLE SCLEROSIS DEVELOPMENT	69
<i>A. Kozorez, E. Akshevskaya</i>	
PROGNOSTIC SIGNIFICANCE OF INTEGRAL INDICATORS OF CELLULAR REACTIVITY OF HOMEOSTASIS IN CORONAVIRUS INFECTION COVID-19.....	70
<i>E. Kozyreva, R. Smolyakova, N. Khokhlova, I. Antashkevich, E. Shpadaruk</i>	
ANTIOXIDANT PROPERTIES OF NATIVE, DEFATTED, FERMENTED AND HYDROLYZED BOVINE COLOSTRUM.....	72
<i>P. Krasovskaya, E. Tarun, E. Staselovich, T. Halavach, R. Romanovich</i>	
ANALYSIS OF THE CELLULAR COMPOSITION OF PERIPHERAL BLOOD OF PATIENTS WITH STROKE	73
<i>A. Krishtopenko, E. Shpadaruk, R. Smolyakova</i>	
ANALYSIS OF THE MORBIDITY OF THE POPULATION OF THE REPUBLIC OF BELARUS WITH SOCIALLY SIGNIFICANT INFECTIONS (2005–2019)	74
<i>L. Kurilova, N. Porada</i>	
INTRAVENOUS LASER BLOOD IRRADIATION OF DIABETES MELLITUS PATIENTS	75
<i>Y. Li, V. Lemiasheuski, K. Ostrenko, A. Ovcharova</i>	
FEATURES OF THROMBIN-INDUCED PLATELET AGGREGATION IN ARTERIAL HYPERTENSION	76
<i>V. Linnik, A. Bakunovich</i>	
STUDY OF WATER AND ALCOHOL EXTRACTS OF PLANTS BY THIN-LAYER CHROMATOGRAPHY	77
<i>Yu. Lozyuk, E. Tarasova</i>	
QUANTUM-CHEMICAL MODELING AND PHYSICO-CHEMICAL PROPERTIES OF CYCLOPYROX	78
<i>M. Lubchenko, A. Yurlevich, D. Novik, S. Shahab</i>	
THE ROLE OF MICROBIOTA IN THE DEVELOPMENT OF METABOLIC DISEASES.....	79
<i>A. Lukyanova, M. Statsi, M. Lobai</i>	
AGE AND GENDER STRUCTURE OF PATIENTSWHO COMPLETED RADICAL RADIOTHERAPY COURSE FOR HEAD AND NECK CANCER AT THE BREST REGIONAL ONCOLOGICAL DISPENSARY FOR THE PERIOD 2016–2018	80
<i>R. Lukyanovsky, P. Demeshko, A. Batyan, E. Hancharova</i>	

MATHEMATICAL MODELING OF THE DISTRIBUTION OF VIRAL INFECTIONS IN URBOECOSYSTEMS	81
<i>M. Madani, O. Garkovich, M. Turetsky</i>	
THE ROLE OF HYDROGELS IN THE ECOLOGICALLY CLEAN CROP OF <i>CICER ARETINUM L.</i> IN ARID REGIONS OF UZBEKISTAN	82
<i>S. Makhmadiyev, Sh. Abdullaev</i>	
EFFECT OF GUANOSINE AND GUANOSINE TRIPHOSPHATE ON THE PROCESS OF FIBRIL FORMATION OF INSULIN MOLECULES	83
<i>A. Makhnach, N. Bogdanova, J. Venskaya, V. Sagan, O. Sokolovich</i>	
EFFECT OF LOW-INTENSITY LASER RADIATION EXPOSURE TIME ON MICROORGANISMS	84
<i>A. Mandrik, E. Tarasova</i>	
THE PROBLEM OF "SMALL DOSES" IN RADIOBIOLOGY	85
<i>U. Martynenko, N. Gerasimovich</i>	
INFLUENCE OF γ -RADIATION ON DESTRUCTION AND CRYSTALLINE STARCH	86
<i>E. Maslyukov, A. Bulavko, V. Litvyak, V. Kravchenko, A. Batyan, M. Atroshko</i>	
MEDICINAL PROPERTIES OF <i>SALVIA OFFICINALIS L.</i>	87
<i>A. Matkarimova, G. Ergasheva</i>	
ESTIMATION OF THE DYNAMICS OF THE LEVEL OF ENDOGENIC INTOXICATION IN PATIENTS WITH TUBERCULOSIS DURING COMBINED THERAPY	87
<i>A. Mazurova, K. Shpadaruk, R. Smolyakova</i>	
EFFECT OF POLY-L-LYSINE ON THE FLUORESCENCE INTENSITY OF IgG-FITC CONJUGATES IMMOBILIZED ON THE SURFACE OF SILVER NANOFILMS	88
<i>Ya. Melnikova, I. Koktysh, T. Pitsko (Kaluhina), O. Matusевич, S. Maskevich</i>	
ESTABLISHING THE RELATIONSHIP BETWEEN THE CONCENTRATION OF SOLID PARTICLES IN THE ATMOSPHERIC AIR AND THE INCIDENCE OF ONCOLOGICAL DISEASES IN THE POPULATION OF THE REPUBLIC OF BELARUS	90
<i>M. Mikulich, I. Pukhteva</i>	
COMPARATIVE ANALYSIS OF ECOLOGICAL EDUCATION IN THE REPUBLIC OF BELARUS AND THE REPUBLIC OF POLAND	91
<i>E. Misuno, E. Smirnova</i>	
BEHAVIORAL ACTIVITY AND BIOCHEMICAL PARAMETERS OF THE CENTRAL NERVOUS SYSTEM TISSUE ON THE MODEL OF THE NEURODEGENERATIVE STATE OF PARKINSON'S DISEASE	92
<i>M. Mustafakulov, T. Ishankhodzhaev, B. Zainutdinov, T. Saatov, Sh. Kuziev, S. Hamroyev</i>	
IMMUNOCHEMICAL CHARACTERIZATION OF FRAGMENTS OF ANTIBODIES TO FERRITIN	92
<i>B. Muzychenko, Y. Melnikova</i>	
BIOLOGICAL CHARACTERISTICS OF ADENOSINE MONOPHOSPHATE	93
<i>D. Novik, A. Yurlevich, M. Lubchenko, S. Shahab</i>	
DETERMINATION OF ERCC1 EXPRESSION LEVEL IN PATIENTS WITH COLORECTAL CANCER	94
<i>M. Oev, E. Shpadaruk, R. Smolyakova</i>	
SYNTHESIS OF 8-AZIDOFLUDARABINE	95
<i>E. Osipova, E. Deusova, M. Khancheuski, E. Kvasyuk</i>	
RETROSPECTIVE ANALYSIS OF MORBIDITY ADULT POPULATION OF THE CITY OF BYKHOV (2007–2018)	96
<i>V. Papruga, M. Dubina</i>	
INFLUENCE OF SOPHOROFLAVONOSIDE ON THE ACTIVITY OF THE CYTOCHROS-C-OXIDASE ENZYME IN RAT LIVER MITOCHONDRIA UNDER INTOXICATION WITH HALOXIFOP-R-METHYL PESTICIDE	97
<i>M. Parpieva, H. Ruziboev, M. Pozilov, S. Nishanbaev</i>	
ION-EXCHANGE RESIN AS A REAGENT IN THE SYNTHESIS OF SECO-8-BROMOXANTHOSINE	98
<i>V. Pashkovich, M. Khancheuski, Y. Gretskaia, V. Yaroshevich</i>	
COMBINED ANTIHYPERTENSIVE THERAPY	99
<i>T. Piliushyna, A. Bakunovich</i>	

RELATIVE DOSIMETRY OF SMALL FIELDS.....	100
<i>V. Piskunou, S. Siamionau, T. Chikova</i>	
ANALYSIS OF THE INCIDENCE OF ARVI IN THE POPULATION OF MOLODECHNO DISTRICT IN 2011–2020	101
<i>V. Radzevich</i>	
ALZHEIMER’S DISEASE: BIOLOGICAL AND ECOLOGICAL PREREQUISITES, PROMISING DIAGNOSIS AND THERAPY METHODS.....	102
<i>A. Rafalskaya, L. Major</i>	
MICROARTHROPODS IN THE SOIL LAYERS OF SOUTH UZBEKISTAN	103
<i>M. Rakhimov, Z. Elmuratova, D. Majidova</i>	
RARE REPTILES OF THE KASHKADARYA REGION	104
<i>M. Rakhimov, E. Yangiboyev</i>	
INFLUENCE OF SOIL SALINATION ON THE EXCHANGE OF PHOSPHOLIPIDS IN PLANTS	105
<i>N. Rakhmonova, M. Abdullaeva</i>	
THYROID DISEASE IN ADOLESCENT GIRLS IN THE REPUBLIC OF BELARUS	106
<i>Y. Reznik, N. Kokorina, A. Avetisova</i>	
THE COMPOSITION OF FRUIT BODIES OF MUSHROOMS WITH MEDICINAL SIGNIFICANCE	106
<i>A. Rodzkin, N. Ikonnikova, M. Labai, E. Ateba</i>	
INDICATORS OF THE INFLAMMATORY SYNDROME IN ARVI AND INFLUENZA.....	107
<i>E. Romantsevich, T. Romanovskaya</i>	
EPIDEMIOLOGICAL ANALYSIS OF THE MORBIDITY OF THE ADULT POPULATION OF THE MINSK REGION WITH DISEASES OF THE ENDOCRINE SYSTEM FOR 2015–2019	109
<i>D. Rotova, V. Stelmakh</i>	
THE EFFECT OF ZINC IONS ON THE INSULIN MOLECULE	110
<i>V. Sagan, N. Bogdanova, A. Makhnach, O. Sokolovich</i>	
QUANTITATIVE ASSESSMENT OF THE HEALTH STATUS OF THE POPULATION OF DYATLOVO, GRODNO REGION IN 2014–2020	111
<i>J. Salash, N. Porada</i>	
FEATURES OF ADP- AND COLLAGEN-INDUCED PLATELET AGGREGATION IN ARTERIAL HYPERTENSION	112
<i>A. Saley, A. Bakunovich</i>	
SYNTHESIS OF 8-METOXYADENOSINE-DIALDEHYDE	113
<i>N. Serdjukova, M. Khancheuski, A. Trifonova, E. Kvasyuk</i>	
ANALYSIS OF THE PREVALENCE OF PANCREATIC CANCER MORPHOTYPES AND CLINICAL CHARACTERISTICS OF PATIENTS	114
<i>E. Serenkova, E. Shpadaruk, R. Smolyakova</i>	
EPIDEMIOLOGICAL ASPECTS OF THE INCIDENCE OF COLORECTAL CANCER OF THE POPULATION OF THE REPUBLIC OF BELARUS	115
<i>V. Sergeenko, A. Sysa</i>	
STUDY OF THE EFFECT OF MODIFICATIONS OF PYRIMIDINE NUCLEOTIDE ON THE ABILITY TO BIND TO HUMAN SERUM ALBUMIN BY FLUORESCENCE ANALYSIS	116
<i>M. Serpitovskaya, T. Zhukovets</i>	
ANALYSIS OF ANTIBACTERIAL ACTIVITY OF CYTIDINE 3',5'-CYCLIC MONOPHOSPHATE IN <i>PROTEUS MIRABILIS</i>	117
<i>A. Shihad, A. Sysa, E. Gritskevitch</i>	
<i>IN VITRO</i> ANTIBACTERIAL ACTIVITY OF NELARABINE PHOSPHATE AGAINST <i>SARCINA LUTEA</i> STRAIN.....	118
<i>A. Shihad, A. Sysa, E. Gritskevitch</i>	
CHANGES IN BLOOD BIOCHEMICAL INDICATORS IN PATIENTS WITH PREVIOUS CORONAVIRUS INFECTION	119
<i>O. Shinkevich, E. Tarasova</i>	
PHOTON AND ELECTRON OUTPUT CONSTANCY.....	120
<i>A. Shish, T. Chikova</i>	

RADIOCHROMIC FILM DOSIMETRY	121
<i>A. Shish, T. Chikova</i>	
PHOTODYNAMIC THERAPY DOSIMETRY	122
<i>A. Shish, T. Chikova</i>	
CONCEPT DEVELOPMENT OF A QUALITY GUARANTEE PROGRAM OF EXAMINATION IN THE DEPARTMENT OF RADIOISOTOPE DIAGNOSTICS OF MINSK CITY CLINICAL ONCOLOGY CENTER.....	123
<i>D. Shpak, T. Chikova</i>	
STAGES OF IMPLEMENTATION OF THE QUALITY ASSURANCE PROGRAM OF EXAMINATION IN MINSK CITY CLINICAL ONCOLOGY CENTER.....	124
<i>D. Shpak, T. Chikova</i>	
BIOLOGICAL ACTIVITY OF LOPINAVIR, RITONAVIR AND NELFINAVIR AS POTENTIAL INHIBITORS OF SARS-COV-2 MAIN PROTEASE M ^{PRO}	125
<i>A. Sidorova, A. Bakunovich</i>	
INFLUENCE OF NUCLEOSIDES ON FIBRILL FORMATION OF INSULIN	126
<i>O. Sokolovich, N. Bogdanova, V. Sagan, A. Mahnach</i>	
PHILLOSOPHERE PATHOLOGIES OF DOMINANT PLANT SPECIES OF SMALL RECREATION ZONES IN MINSK ON THE EXAMPLE OF MIKHAILOVSKY SQUARE	127
<i>Y. Sorgovitskaya, A. Chernetskaya</i>	
SOME REGIONAL FEATURES OF MODERN THYROID PATHOLOGIES OF THE URBAN POPULATION OF THE REPUBLIC OF BELARUS	128
<i>A. Soropyatova</i>	
ANTIOXIDANT ACTIVITY OF WHEY AND COLOSTRUM HYDROLYZATES COMPLEXES WITH CYCLODEXTRIN.....	129
<i>E. Staselovich, E. Tarun, P. Krasovskaya, T. Halavach, R. Romanovich</i>	
MODELING OF THE BIOLOGICAL ACTIVITY OF THE ESSENTIAL OILS COMPONENTS	130
<i>A. Stasevich, A. Hryhoryeu, A. Bakunovich</i>	
FEATURES OF THE DIAGNOSIS OF FELINE VIRAL IMMUNODEFICIENCY AND FELINE VIRAL LEUKEMIA.....	131
<i>M. Statsi, Y. Melnikova</i>	
ANALYSIS OF THE DYNAMICS OF RESPIRATORY DISEASES OF THE POPULATION OF LARGE CITIES OF THE MINSK REGION	132
<i>O. Susha</i>	
COMPARATIVE ANALYSIS OF THE DYNAMICS OF THE INCIDENCE OF RESPIRATORY DISEASES OF THE POPULATION SERVED IN THE UZ "28TH CITY POLYCLINIC" OF PERVOMAIISKY AND UZ "17TH CITY POLYCLINIC" OF THE ZAVODSKY DISTRICT OF MINSK...133	
<i>O. Susha</i>	
A RETROSPECTIVE ANALYSIS MORBIDITY OF THE POPULATION MIORY DISTRICT VARICELLA.133	
<i>K. Sushko, M. Dubina</i>	
THE PRODUCTION OF SUPEROXIDE DISMUTASE 3 AND VASCULAR ENDOTHELIAL GROWTH FACTOR RECEPTOR BY MULTIPOTENT MESENCHYMAL STROMAL CELLS UNDER HYPOXIA CONDITION.....	134
<i>A. Svirskaya, M. Yakauleva, A. Dubko, D. Nizheharodava</i>	
MOLECULAR DOCKING OF 5-(2-HYDROXYBENZYLIDENE)PYRIMIDINE-2,4,6(1H,3H,5H)-TRIONE WITH A CRYSTAL STRUCTURE OF THE PROTEIN COMPLEX 7D2S.....	136
<i>I. Syrytskii, S. Shahab, V. Linnik, A. Pyrko, L. Filippovich</i>	
ANTIOXIDANT ACTIVITIES OF THE 5-(2-HYDROXYBENZYLIDENE)PYRIMIDINE-2,4,6(1H,3H,5H)- TRIONE.....	137
<i>I. Syrytskii, S. Shahab, A. Pyrko, L. Filippovich</i>	
ANTIOXIDANT ACTIVITY (Z)-4-(2-HYDROXYBENZILIDENE)-3-METHYLISOXAZOL-5 (4H)-ONE.....	138
<i>I. Syrytskii, S. Shahab, A. Pyrko L. Filippovich</i>	
SYNTHESIS OF 8-BROMOISOGUANINE	139
<i>A. Trifonova, M. Khanchevsky, E. Kvasyuk</i>	

ANALYSIS OF DISABILITY AND MORTALITY OF THE POPULATION OF THE REPUBLIC OF BELARUS DUE TO DIABETES MELLITUS FOR 2015–2019	140
<i>V. Trosko, Yu. Lyakh</i>	
THE PHENOTYPE OF $\gamma\delta$ T-LYMPHOCYTES IN PATIENTS WITH INFLAMMATORY BOWEL DISEASES	141
<i>D. Tsekanovich, A. Starastin, A. Dybau, D. Nizheharodava</i>	
EPIDEMIOLOGICAL ANALYSIS OF MORBIDITY OF MENTAL AND BEHAVIORAL DISORDERS IN 2010–2019	142
<i>E. Tserlyukevich, N. Porada</i>	
MEDICAL REHABILITATION AFTER POSTED CORONAVIRAL COVID-19 INFECTION	143
<i>A. Tsvetkova</i>	
ANALYSIS OF ANTIOXIDANT ACTIVITY OF GROOVE MUSHROOMS COLLECTED IN RUSSIA, BELARUS AND CHINA	144
<i>A. Tuboleva, Y. Pavlovskaya, E. Tarun</i>	
PHYSICAL SORPTION BETWEEN NANOTUBE (8,10) AND RESVERATROL	145
<i>A. Tushinskaya</i>	
ANTIOXIDANT ACTIVITY OF PYRIMIDINE DYES	146
<i>A. Tushinskaya, A. Augustinovich, A. Hryhoryeu, D. Ustymchuk</i>	
FORMATION OF A COMPLEX IN A SYSTEM: NANOTUBE (8,10) AND RESVERATROL	147
<i>D. Ustymchuk</i>	
LABORATORY DIAGNOSTICS OF CORONAVIRUS INFECTION SARS-COV-2	148
<i>J. Venskaya, A. Makhnach, A. Dubinskaya</i>	
THE DIAGNOSTIC VALUE OF DETERMINING THE TITERS OF ANTIBODIES TO HEPATITIS B AND C IN SERUM SAMPLES	149
<i>A. Voroshnina, E. Tarasova</i>	
DESIGN AND SYNTHESIS OF A BIOLUMINESCENT PROBE PRECURSOR (AMPPD)	150
<i>Wanghui, S. Shahab</i>	
EFFECT OF MESENCHYMAL STROMAL CELLS ON IL-18 PRODUCTION IN CROHN'S DISEASE	151
<i>M. Yakauleva, M. Zafranskaya, V. Timchenko</i>	
«ANALYSIS OF INCIDENCE WITH PRIMARY LOSS OF EMPLOYMENT DUE TO INJURY AT JSC «SKBZ «AIBERTIN» (2016–2020)	152
<i>S. Yakovchik, V. Stelmakh</i>	
STUDY OF THE GENE EXPRESSION OF GHRELIN AND NESFATIN-1 GENES IN RAT ORGANS	153
<i>I. Yakubov, A. Kuliboev</i>	
EFFECTS OF ANTHROPOGENIC FACTORS ON THE GEOLOGICAL ENVIRONMENT OF SHANDONG PROVINCE	154
<i>Xu. Yanhui, V. Lemiasheuski</i>	
SYNTHESIS OF DISODIUM SALT OF DI-BISULFITADENOSINE	155
<i>V. Yaroshevich, J. Gretzkaya, M. Khancheuski, E. Kvasyuk</i>	
SYNTHESIS OF SECO DERIVATIVES OF ADENOSINE AND URIDINE	156
<i>V. Yaroshevich, J. Gretskaya, V. Pashkovich</i>	
THE INFLUENCE OF THE URBAN ENVIRONMENT ON THE DIAGNOSIS ON THE OF MALE AND FEMALE INFERTILITY IN THE POPULATION OF THE REPUBLIC OF BELARUS	157
<i>M. Yaskovich, P. Kirvel</i>	
STATISTICAL ANALYSIS OF THE DATA OF REGISTRATION OF CONGENITAL DEVELOPMENTAL FAULTS	158
<i>A. Yatskov, A. Ershova-Pavlova, N. Kokorina</i>	
DETERMINATION OF THE MOLECULAR BIOLOGICAL PROFILE AMONG PATIENTS WITH ESTABLISHED BREAST CANCER CARCINOMA AND HORMONE EXCRETION IMBALANCE	159
<i>K. Yurchenkova, A. Prokopuk, E. Shpadaruk, R. Smolyakova</i>	
BIOLOGICAL CHARACTERISTICS OF FLUDARABINE	161
<i>A. Yurlevich, D. Novik, M. Lubchenko, S. Shahab</i>	

FREQUENCY OF OCCURRENCE OF THE OPEN DUCTUS ARTERIOSUS IN NEWBORNS OF THE CITY OF MINSK	162
<i>E. Zheleznyaya, N. Kokorina, A. Ershova-Pavlova</i>	
ANALYSIS OF PANCREAS CANCER INCIDENCE IN MINSK AND THE REPUBLIC OF BELARUS IN THE PERIOD FROM 2000 TO 2018	163
<i>L. Zhuk, Y. Malinovskaya, Y. Zhuk</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)

LAND DEGRADATION IS A SERIOUS ECONOMIC AND ENVIRONMENTAL PROBLEM	165
<i>M. Abdurakhmanova</i>	
EFFECTS OF DRYING PROCESS ON BIOLOGICAL PROPERTIES OF SOILS	166
<i>T. Abdurakhmonov, M. Karimboeva</i>	
ECOLOGICAL, PHARMACOLOGICAL AND BIOCHEMICAL ASSESSMENT OF THE FRUITS OF CLOUDBERRY SQUAT (RUBUS CHAMAEMORUS L.) OF NORTHERN BELARUS	168
<i>E. Akshevskaya, A. Kozorez</i>	
ENVIRONMENTAL DIRECTION OF THE "A1" ENTERPRISE.....	169
<i>M. Artemchuk, V. Krasovsky, P. Krishchanovich</i>	
THE PROBLEMS OF ECOLOGICAL SAFETY IN REPUBLIC OF ARMENIA IN RECENT DISTILLATES AND THEIR IMPACT ON CHILD MORBIDITY	170
<i>T. M. Astabatsyan</i>	
ANALYSIS OF THE HANDLING OF CONTAMINATED TEXTILES IN THE REPUBLIC OF BELARUS....	171
<i>E. Baeva, V. Misiuchenka</i>	
CURRENT TRENDS IN THE GENERATION OF INDUSTRIAL WASTE AND WASTE MANAGEMENT AT THE ENTERPRISE «TREPLAST»	172
<i>K. Baradynich, A. Fralou</i>	
VARIABILITY OF CERTAIN TRAITS UNDER THE INFLUENCE OF ELECTROMAGNETIC IMPULSES TO THE VEGETATIVE ORGAN OF CULTIVARS AND LINE PLANTS DEVELOPED IN CONDITIONS OF WATER SCARCITY	173
<i>A. Bekmukhamedov, A. Khasanova, N. Khusanov</i>	
INHERITANCE OF FIBER OUTPUT IN COTTON HYBRIDS.....	174
<i>S. Boboyev, M. Mirakhmedov, G. Narkizilova, J. Ruziev</i>	
SUMMER POPULATION OF VRANOVY BIRDS IN BORISOV	175
<i>M. Bogachova, A. Khandohiy, Y. Kisialiova</i>	
MODERN PROBLEMS OF MORPHOMETRIC ANALYSIS	176
<i>N. Bushkevich</i>	
LICHENOINDICATION OF AIR POLLUTION OF M. Ya. PAVLOV'S PARK	177
<i>S. Chadovich, I. Lapshevich, A. Titov, A. Lunovich, Y. Zhyltsova</i>	
THE IMPACT OF FOOD WASTE ON THE ENVIRONMENT	178
<i>D. Churakova, L. Kuzina</i>	
ANALYSIS OF THE SPECTRAL REFLECTIVITY OF AGRICULTURAL VEGETATION	179
<i>Y. Davidovich</i>	
ASSESSMENT OF THE ECOLOGICAL STATE OF TREE PLANTS OF PAVLOV PARK	180
<i>U. Dubatoyka, E. Zhuk</i>	
IMPLEMENTATION OF THE STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS IN THE REPUBLIC OF BELARUS	180
<i>V. Duzinchuk, S. Golovaty</i>	

ANALYSIS OF THE POSSIBILITIES OF RECYCLING DISUSED FURNITURE IN THE REPUBLIC OF BELARUS	181
<i>P. Dzelianko, V. Misiuchenka</i>	
ANALYSIS OF THE TREATMENT OF CULLET IN THE REPUBLIC OF BELARUS	183
<i>M. Evsievich, V. Misyuchenko</i>	
EFFECT OF BIOSOLVENT DRUGS ON THE WASHING EFFECTIVENESS OF SALTS IN ALLUVIAL SOILS WITH DIFFERENT SALT	184
<i>M. Fakhrutdinova, O. Imomov</i>	
INFLUENCE OF MOLD FUNGI OF THE GENUS <i>ASPERGILLUS</i> ON A NATURAL CELLULOSE POLYMER IN MACROVISUAL OBSERVATION	185
<i>L. Gavriluyk, N. Ikonnikova</i>	
DIFFERENCES IN THE VERBAL DEFINITION OF THE CHARACTERISTICS OF THE ECOLOGICAL QUALITY OF PRODUCTS IN SOME LANGUAGES AS A BASIS FOR THE UNIFICATION OF THEIR ENVIRONMENTAL LABELING	186
<i>V. Gudovich, A. Fralou</i>	
Natural analogues in physics and mechanics	187
<i>D. Ignatovskiy, V. Krasovskiy</i>	
ADVANTAGES OF PHITOREMEDIATION CLEANSING SOILS CONTAMINATED WITH HEAVY METALS	188
<i>Z. Jabbarov, N. Sultonova</i>	
FEATURES OF RADIAL DISTRIBUTION OF NICKEL IN FOREST SOILS IN ZONES OF INFLUENCE OF ELECTRICAL PRODUCTION	189
<i>P. Kachanovich</i>	
AGRICULTURAL CROPS IN THE STRUCTURE OF THE DIET OF RESOURCE ANIMAL SPECIES IN BELARUS	190
<i>A. Kapskaya, Yu. Lyakh, M. Lezhdey</i>	
COMPREHENSIVE EVALUATION AND OPTIMIZATION OF ECOLOGICAL TRANSFORMATION OF COAL MINING SUBSIDENCE LAND – A CASE STUDY OF PAN'AN LAKE URBAN WETLAND PARK IN XUZHOU	191
<i>Ju. Kechun</i>	
COMPARATIVE ANALYSIS OF METHODS FOR CALCULATING STATIONARY RADIATION PROTECTION APPLIED TO PREMISES FOR RADIATION THERAPY	192
<i>E. Kemeshe, E. Preobrazhenskaya, M. Piatkevich</i>	
STUDY OF THE PROPAGATION OF CILIATE BANANA-EATEN GECKOS IN THE MINSK ZOO	193
<i>N. Kovalchuk, I. Khandohiy</i>	
COMMITMENT TO THE ALARA CONCEPT AT THE BELARUSIAN NUCLEAR POWER PLANT AS ONE OF THE KEY FACTORS IN PROVIDING THE RADIATION SAFETY OF PERSONNEL	194
<i>V. Kutas</i>	
TROPHIC STRUCTURE IN THE HYDROGEN SULFIDE LAKE BARKOVSHCHINA	195
<i>I. Lapuka</i>	
MONITORING OF SARCOCYSTOSIS AMONG HUNTING SPECIES OF WATERING BIRDS OF MINSK REGION	197
<i>S. Latushko, Yu. Lyakh</i>	
ANALYSIS OF THE INITIAL MATERIALS FOR THE "ENVIRONMENTAL PROTECTION" SECTION OF THE FLAX FIBER BLEACHING WORKSHOP RECONSTRUCTION PROJECT	198
<i>V. Lesik, V. Misyuchenko</i>	
ECONOMIC POTENTIAL OF WIND POWER INDUSTRY IN BELARUS	199
<i>L. Lipnitski, M. Treyvas, E. Cherevan</i>	
THE NEED TO DEVELOP MEASURES FOR ENERGY SAVING AND IMPROVING ENERGY EFFICIENCY IN HEALTHCARE INSTITUTIONS	200
<i>L. Lipnitski, A. Kutas, K. Solenok</i>	
URBAN AIR POLLUTION AND ITS COUNTERMEASURES IN HEBEI, CHINA	201
<i>Liu Jiu 'an, V. Lemiasheuski, Mehmet Musa Özcan</i>	

STORMWATER RUNOFF POLLUTION CONTROL – THE COMPREHENSIVE IMPROVEMENT PROJECT OF WATER ENVIRONMENT IN ZHANGJIAKOU CITY, HEBEI PROVINCE.....	202
<i>Liu Zhi gang, V. Lemiasheuski</i>	
PARASITIC NEMATODES LOCALIZED UNDER THE CUTICLE OF THE MUSCULAR STOMACH OF WILD AND DOMESTIC WATER BIRDS AND THEIR DIAGNOSTICS	204
<i>Yu. Lyakh, A. Bormotov</i>	
IXODIC TICKS IN THE RECREATIONAL ZONE OF MINSK AND THE ROLE OF HUMANS IN ENHANCING THEIR NEGATIVE INFLUENCE	205
<i>Yu. Lyakh, L. Isachenko</i>	
NATURAL RECREATIONAL POTENTIAL OF GOMEL REGION OF REPUBLIC OF BELARUS	206
<i>A. Makarenko</i>	
THE IMPACT OF THE THERMAL TREATMENT OF THE SUBSTRATE ON THE BIOLOGICAL EFFICIENCY OF GILLED MUSHROOMS (PLEUROTUS OSTREATUS).....	207
<i>A. Makas, G. Krusir</i>	
ANALYSIS OF BIOCHEMICAL PROPERTIES OF <i>BACILLUS CEREUS</i> PURE CULTURES UNDER PROLONGED EXPOSURE TO IONIZING RADIATION.....	208
<i>S. Maltsava, A. Yakubovich, E. Gritskevitch</i>	
INFLUENCE OF LOW-INTENSITY LASER RADIATION ON THE GROWTH OF PURE <i>BACILLUS SUBTILIS</i> CROPS ISOLATED FROM THE SOILS OF THE POLESYE STATE RADIATION AND ECOLOGICAL RESERVE	209
<i>E. Maslyukov, L. Gavriluyk, E. Gritskevich, A. Vabishschevich</i>	
ON A NATIONAL GLOSSARY OF NUCLEAR AND RADIATION SAFETY AS AN INSTRUMENT OF TERMINOLOGY HARMONIZATION	210
<i>K. Mazanik, T. Artsemyeva, N. Tushin, M. Michalevic</i>	
NANOSCALE PHOTOCATALYSTS BASED ON ZINC OXIDE (ZnO) FOR THE REMOVAL OF PHARMACOLOGICAL WASTE IN AQUEOUS MEDIA UNDER THE INFLUENCE OF ULTRAVIOLET RADIATION	211
<i>A. Miadzvetski, A. Shcherbovich, V. Plakhodzka, N. Savastenko, I. Filatova, V. Lushkevich, S. Maskevich</i>	
EVALUATION OF BY-PRODUCTS THAT CAUSE ENVIRONMENTAL PROBLEMS IN OLIVE OIL PRODUCTION.....	212
<i>Mehmet Musa Özcan, V. Lemiasheuski</i>	
ELECTRIC CARS IN THE CONTEXT OF ENVIRONMENTAL IMPROVEMENT.....	213
<i>V. Pleskanev, E. Yablonsky, D. Mishlakov, P. Shalkevich</i>	
IMPROVEMENT OF TECHNOLOGY OF WASTE PROCESSING OF MILK PROCESSING ENTERPRISES.....	214
<i>V. Prilutskiy, G. Krusir, O. Sagdeeva, I. Kuznetsova</i>	
PASSIVE IMMUNITY DEFENSE SYSTEM OF PLANTS AGAINST PHYTOPATHOGENIC FUNGI.....	215
<i>D. Pristavkina, A. Chernetskaya</i>	
PROBLEMS OF POLLUTION BY SOLID AND HOUSEHOLD WASTE IN THE REPUBLIC OF BELARUS.....	216
<i>I. Reich</i>	
EXPRESS METHODS FOR WATER POLLUTION IDENTIFICATION	217
<i>D. Samokhina, A. Zhukova, U. Kapitsa</i>	
ENVIRONMENTAL CRISIS IN CHINA	218
<i>H. Siqin, O. Nilova</i>	
ATMOSPHERIC AIR POLLUTION AND POSSIBLE EFFECTS FOR HUMAN HEALTH IN THE REPUBLIC OF BELARUS.....	219
<i>V. Sivukha, A. Rodzkin</i>	
ENERGY EFFICIENT TECHNOLOGIES OF PRE-SOWING PREPARATION OF SALAD SEEDS	220
<i>V. Sivukha, V. Pashynski</i>	
INFLUENCE OF HUMIDITY ON THE BIOLOGICAL EFFICIENCY OF RAIN WORM (<i>EISENIA FETIDA</i>) IN THE COMPOSTING OF FOOD WASTE	221
<i>T. Sokolova, G. Krusir, V. Sokolova O. Sagdeeva</i>	

INFOSPHERE AND FUNDAMENTAL VALUES IN THE AGE OF HYBRID WARS.....	222
<i>A. Sokolova, S. Sokolova</i>	
ANALYSIS OF RADIATION EFFECT ON INDIVIDUAL BIOTA COMPONENTS BY THE LEVEL OF CONTAMINATION BY RADIONUCLIDES ⁹⁰ Sr и ¹³⁷ Cs OF LAKES IN THE BELARUSIAN SECTOR OF THE CHERNOBYL EXCLUSION ZONE.....	223
<i>E. Sologub, E. Busko</i>	
BIOINDICATION ASSESSMENT OF SOILS ANTHROPOGENIC LOAD OF THE M. Ya. PAVLOV'S PARK.....	224
<i>A. Strakh, V. Shashkova, A. Tuz, O. Pisarenko, Yu. Zhyltsova</i>	
SEASONAL CHANGES IN THE COMPOSITION OF THE AVIFAUNA OF PARKS IN MINSK	225
<i>E. Svistun, A. Khandohiy, N. Anishchanka</i>	
ANALYSIS OF THE POSSIBILITIES OF PROCESSING OIL SLUDGE IN THE REPUBLIC OF BELARUS.....	226
<i>O. Targovich, V. Misiuchenka</i>	
STREAMING SERVICE AS MUSIC THERAPY	227
<i>A. Tsikhonchyk, U. Ivaniukovich</i>	
USAGE OF MIXED WASTE OIL IN THE MIXTURE WITH ETHANOL FOR MICROBIAL EXOPOLYSACCHARIDE ETHAPOLAN BIOSYNTHESIS	228
<i>A. Voronenko, T. Pirog</i>	
THE PROSPECT OF GARBAGE RECYCLING IN NANTONG, JIANGSU PROVINCE, CHINA	229
<i>Li Xiaolong, V. Lemiasheuski</i>	
HYDROGEN ENERGY.....	230
<i>M. Yakauleva, V. Timchenko</i>	
INVASIVE PROPERTIES OF <i>ROBINIA PSEUDOACACIA</i> IN BELARUSIAN PALESSE.....	231
<i>M. Yakhnovets, E. Yurchenko</i>	
ANALYSIS OF THE PHYSIOLOGICAL AND BIOCHEMICAL PROPERTIES OF SANITARY-INDICATIVE MICROORGANISMS ISOLATED FROM SOILS EXPOSED TO LONG-TERM EXPOSURE TO IONIZING RADIATION.....	232
<i>H. Yakubovich, S. Maltsava, E. Gritskevitch</i>	
SYNTHESIS OF PLANT GROWTH STIMULANTS BY <i>NOCARDIA VACCINII</i> IMV B-7405 STRAIN IN THE PRESENCE OF ERYTHRITOL	233
<i>V. Zhdaniuk, D. Piatetska, T. Pirog</i>	
COMPARATIVE CHARACTERISTICS WATER MONITORING METHODS	234
<i>A. Zhukova, I. Volodko, U. Kapitsa</i>	

Научное издание

АКТУАЛЬНЫЕ ЭКОЛОГИЧЕСКИЕ ПРОБЛЕМЫ

ТЕЗИСЫ XI МЕЖДУНАРОДНОЙ НАУЧНОЙ КОНФЕРЕНЦИИ
МОЛОДЫХ УЧЕНЫХ, АСПИРАНТОВ, МАГИСТРАНТОВ, СТУДЕНТОВ

2–3 декабря 2021 г.

г. Минск, Республика Беларусь

На английском языке

Редакторы *Т. В. Беляева, Ю. И. Буткевич,
Н. А. Грицай, Д. М. Громыко, Т. И. Жегало,
О. А. Климова, Н. М. Левданская, П. С. Литвинчук,
Л. Н. Никитина, Е. И. Суббота, Г. В. Третьяк, А. И. Тюрдеева*
Компьютерная верстка *М. Ю. Мошкова*

Подписано в печать 22.11.2021.

Формат 60×90 1/8.

Бумага офсетная. Печать цифровая.

Усл. печ. л. 31,00. Уч.-изд. л. 25,29.

Тираж 100 экз. Заказ №

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.