ABSTRACTS AND KEY WORDS
2022-1

AGRONOMY

Batyahina N.A **DISTURBED SOIL ECOSYSTEMS AND WAYS TO RESTORE THEM**

A person must oppose a negative phenomenon in the biosphere with an effective environmental policy, that is, a set of measures that must protect water and soil, flora and fauna from negative anthropogenic influences, eliminating undesirable consequences and harm. The article notes that chemical pollution leads to the degeneration of nature, to a change in biocenoses, to the destruction of the foundations of life. It is known that dioxins and dioxin-like toxicants, when released into the soil, shift the biological equilibrium and promote the spread of pathogenic microorganisms. FTP "Dioxin" aimed to survey the pollution of the territory of the Vladimir region with dioxins and assumed the solution of the following tasks: assessment of the environmental risks of living in Vladimir and Suzdal; identification of sources of contamination with dioxins; organization of an ecological expedition to collect water and soil samples. The study of the selected objects showed that the possible factors of dioxin pollution in the Vladimir region were: the functioning of the Vladimir waste incineration plant; main PVC processing facilities at JSC Vladimirsky Chemical Plant; carrying out continuous chemicalization in the Opolye zone with the use of organochlorine preparations; low ecological culture of the inhabitants of the region, burning the old PVC film in the gardens. It has been established that a pollutant that poisons the soil ecosystem causes disturbances in the processes of self-regulation and reproduction of fertility. Cadastral documents should take into account the agroecological features of the problem: the type of contaminated land and their humus content, since the content of organic matter is the main factor in curbing the movement of pollutants. Reducing chlorine production and converting PVC production will form the basis for a radical solution to the dioxin problem. Extraction and physicochemical technologies for dioxin detoxification contain an anthropogenic element in the destruction of ecosystems. Therefore, to enhance the natural processes of destruction of pollutants in the soil, biotechnology is used based on the use of bacteria and fungi.
Keywords: *soil ecosystems, chemical pollution, self-regulation, dioxins, pollutant detoxification technologies.*

Kasatkin S.A., Meltsaev I.G., Vikhoreva G.V. **COMPARATIVE ASSESSMENT OF CROP ROTATIONS WITH DIFFERENT SATURATION OF LEGUMES ON THE FERTILITY OF SOD-PODZOLIC SOIL AND YIELD IN THE UPPER VOLGA REGION**

On sod-podzolic soils typical for the Upper Volga region in 2016-2020, studies were conducted in 4 and 6 full crop rotations with 25 and 50% saturation with legumes in order to improve soil fertility and increase crop yields. The research was carried out using two technologies of cultivation of agro-crops: natural fertility (without mineral fertilizers) and intensive technology (when applying NPK-90 kg/ha in the active substance).
As field experiments have shown, in 4 and 6 full crop rotations, the balance of nutrients according to natural technology turned out to be negative, according to intensive technology - positive and with a high content of macronutrients. The number of earthworms in the soil layer of 0-20 cm on average on the variants without fertilizers in 4 and 6 full crop rotations was at the level of 24 and 27 ekz/m2, with the introduction of NPK - 29 and 34 ekz/m2. The application of mineral fertilizers increased the rate of decomposition of linen fabric by 7.6% in general for both crop rotations. The mineralization of the tissue in the 6-pole crop rotation was higher by 3.7%. This process proceeded more intensively under the clover of 1 year of use - 37.9 and 46.6%, 2 years of use - 33.6 and 41.6%. Due to the smaller number of PKO under spring crops, the mineralization indicators are much lower. The productivity of crops in the 4-full crop rotation by intensive technology was 3.73 t/ha, which is 19.2% higher than the control, where this indicator was 3.13 t/ha. In the 6-full crop rotation, the excess was 29.1% with yields of 3.9 and 3.02 t/ha, respectively.

Keywords: *crop rotation, fertilizers, fertility, biological and agrochemical properties of the soil, productivity.*

Torikov V.E., Vaskin V.F., Dronov A.V., Vaskina T.I. **CURRENT STATE, TRENDS AND PROBLEMS OF GRAIN PRODUCTION**

The article deals with dynamics, structure of grain and leguminous crops production on categories of farms and species of crops, development trends, structural changes and problems of the industry functioning at the present stage of development.. An analysis of the main indicators of the industry development for the period from 1990 to 2020 is given. The dynamics of changes in grain production in 1990-2020 was uneven. The lowest level of grain and leguminous crops harvest (47.8 million tons) was in 1998, which is only 40% of the 1990 level. The demand for feed grains dropped sharply as a result of a decrease in the livestock. The steady dynamics towards the rise of the gross harvest of grain and leguminous crops hasbeen established since 2000. In 2017 and 2020, the highest gross grain harvest was obtained and was about 135 million tons (115% in relation to 1990). The share of wheat in total grain production increased from 42.5% in 1990 to 68.1% in 2010 (in 2020 it slightly decreased and amounted to 64.4%).The economic growth is provided by agricultural holdings with a high level of technological equipment. Large agricultural organizations account for 70% of grain production, and 64% of the area under crops. The increase in the gross harvest is mainly influenced by the raise in productivity and the improvement of the crops structure. Despite certain successes in recent years, a number of unresolved system problems still remain, which may become aggravated in the future.

Keywords*: grain farming, gross harvest, sown areas, yields of grain and leguminous crops, dynamics, structure, categories of farms.*

Utkin A.A. **MERCURY AND ARSENIC IN SOD-PODZOLIC SOILS OF REFERENCE SITES OF THE VLADIMIR REGION**

The paper presents the results of long-term agrochemical and ecotoxicological studies of reference sites of sod-podzolic soils for agricultural purposes of the Vladimir region, which were carried out to establish changes in the parameters of the main agrochemical properties and to assess the ecotoxicological state of soils by the content of gross forms of mercury and arsenic. A decrease in the availability of mobile forms of phosphorus, exchangeable calcium bases, an increase in the availability of mobile potassium, exchangeable magnesium, an improvement in capacity-sorption indicators, a decrease in exchange and hydrolytic acidity and a slight change in the availability of organic matter in soils was found. The concentrations of gross forms of mercury and arsenic in the surveyed soils, in general, did not exceed the maximum permissible concentrations and values of the world clarks. According to the content of mercury and arsenic, the soils of the plots are slightly polluted and are not potentially dangerous for cultivated plants and human health. According to the Pearson correlation coefficients, the peculiarities of the influence of granulometric composition, metabolic acidity, organic matter content and mobile forms of soil phosphorus on the formation of concentrations of gross forms of mercury and arsenic were established. A high correlation (0,72-0,96) has been established between the concentrations of mobile phosphorus and gross forms of arsenic, probably associated with the entry of arsenic compounds into the soil as part of phosphorus fertilizers when fertilizing the soils of the plots.

Keywords: *mercury, arsenic, sod-podzolic soil, reference sites, agrochemical properties, Vladimir region*

VETERINARY MEDICINE AND ZOOTECHNY

Kicheeva T. G., Yermolina S.A., Abarykova O.L. **TO THE PROBLEM OF THE PREVENTION OF TRANSPORT STRESS IN PIGS**

For a long time, it is known that the creation of an appropriate environment for farm animals and birds is one of the most significant prerequisites for producing excellent quality products from them. However, at the present level, when the intensification of agricultural production is underway, the organism of animals and birds is becoming more sensitive to different environmental impacts. The adaptation of the body to the conditions of the

production sphere is carried out using unconditional and conditional reflexes. But along with constant impacts on the body, individuals are under threat of suddenly acting environmental factors, which they also have to resist. These factors are called stressors, and the emerging state is stress. As a stressor, there may be pain, fear, infection, injury, intoxication, physical activity, vaccination, transportation, hunger strike, dehydration, feeding ration, concentration of large livestock on limited areas. At the same time, the intensive technology imposes higher demands and to the animal itself, the physiological burden on which increases significantly. The individuals should have a high genetic potential and natural resistance, the ability to quickly adapt to new conditions without reducing productivity, have a high efficiency of energy conversion and feed nutrients in poultry products, have good reproductive qualities. Against this background, it becomes advisable to speed up the process of adapting the body to the effects of stressors and develop methods for the prevention and treatment of the resulting process.

Keywords: *transport stress, pigs, placenta denatured emulsified, hematological indicators.*

Mazilkin I.A. INFLUENCE OF THE DEGREE OF INBRED MARES OF VLADIMIR HEAVY-DUTY BREED ON THEIR DEVELOPMENT AND WORKING QUALITIES

Horses of domestic heavy-duty breeds, including the Vladimir one, are the main improvers in working horse breeding. Vladimir horse breed belongs to a group of breeds with a limited gene pool. Therefore, due to the small number of stallions at the stud farm, one involuntarily has to use inbred pairing of horses.

The purpose of our work was to study the influence of the degree of inbred mares of the main lines of Vladimir heavy-duty breed on their development and working qualities.

It was found that inbreeding has been used at the stud farm for a long time. 39% of mares were obtained using close inbreeding, 29% - close, 24% - moderate and 8.0% remote. A definite relationship has been established between the degree of inbreeding and the development of mares of various strains. The best development was found in mares which were obtained using moderate inbreeding, and the worst - using close one. The degree of inbreeding also influenced the performance of mares. So mares with the use of moderate inbreeding within 15.24 minutes were distinguished by the best agility when delivering the load in step and trot. and 5.59 minutes. and a distant 16.20 min. and 6.12 minutes, and a greater draft endurance when moving a load of 10 tons, mares obtained using close inbreeding - 524.2 meters.

The highest grading points for typicality, origin and development, and, consequently, breeding value, were given to mares obtained with the use of moderate and distant inbreeding, and less valuable with close inbreeding. To reduce the inbreeding of the livestock, it is necessary to exclude the use of close inbreeding.

Keywords: *degree of inbreeding, line, draft endurance, high-leggedness, broad-bodied, boning, grading.*

Selimyan M. O. **RELATIONSHIP OF PRODUCTIVE AND REPRODUCTIVE TRAITS OF BULLS' DAUGHTERS OF DOMESTIC AND FOREIGN SELECTION USED ON THE POPULATION OF KHOLMOGORSKY CATTLE OF THE VOLOGDA REGION**

The article presents research on the topic "The relationship of productive and reproductive traits of bulls' daughters of the Kholmogory breed of domestic and foreign selection." The purpose of this study is to determine and compare the relationship between the productive and reproductive traits of bulls' daughters of the Kholmogory breed of domestic and foreign selection.

The research base was formed on the basis of data from 3 breeding farms of the Vologda region entered into the pedigree register of the Vologda region and being pedigree reproducers using the information and analytical system ARM "SELEX" - Dairy cattle. The database includes data on 765 daughters for the first lactation, received from 18 domestic producers and 14 foreign breeding. The correlation was calculated for the studied traits of bulls' the daughters of

domestic and foreign selection.
Domestic and foreign selection is determined by the place of birth of producing bull. The imported breeding material of the Kholmogory breed is represented by bulls of Canada, Denmark and Germany.
Based on the calculation of correlation relationships of the studied traits in foreign breeding, a trait variation from -0.07 to 0.48 was revealed, in domestic breeding from -0.20 to 0.26. It proves the multidirectionality of the selection process in the controlled populations of the Kholmogory cattle breed of domestic and foreign selection. Domestic and foreign breeding have their own strengths and weaknesses, which must be taken into account in planning the breeding process in the population of the Kholmogory breed. To carry out effective selection, bulls of domestic and foreign selection should be used Such measures allow regulating the growth and decline of certain economically useful traits and prevent the fall of one of them against the background of the growth of the other.

Keywords: *Correlation, domestic selection, foreign selection, traits, Kholmogory breed.*

Sudarev N.P.,Sharkaeva G.A.,Gerasimov A.A., Chargeishvili S.V., Abramyan A.S., Abdulaliev M.M. **PLACE OF RUSSIA IN THE WORLD MARKET PRODUCTION AND MEAT CONSUMPTION**

This article provides an analytical review of the production and consumption of meat in the world market, the structure of meat consumption by types of livestock and poultry is given. According to the data obtained, beef makes up less than 1/3 of the total world meat consumption. Chicken meat is popular due to its early maturity, culinary and dietary properties. In 2019, the United States produced 20 million tons of chicken meat, Brazil - 16 million tons, and China - 14 million tons. In total, the three countries produce 42% of the world's chicken meat production. The rating of fifteen countries of the world in terms of meat consumption per capita is presented. In the USA consume an average of 97 kg per person per year, in Israel - 93 kg, in Brazil - 90 kg. Russia is in ninth position - 64 kg per person in 2020. The recommended rational norms of consumption of meat products in Russia, which meet the modern requirements of a healthy diet, are given. An analysis is made of the provision of the Russian Federation with meat domestic production of beef, pork and poultry by years from 2017 to 2020. In the context of the federal districts shown the production and consumption of livestock meat and poultry per capita in slaughter weight. In terms of per capita beef consumption in the world, Russia is not among the top ten. And in terms of pork consumption it is in fourth place, behind only South Korea, Vietnam and China. The share of pork in meat consumption is practically in line with the world average. The largest producer of beef and pork in the Russian Federation is AIH Miratorg. It produces 522.3 thousand tons of pork in live weight, with a share in the total volume of industrial production in the Russian Federation - 10.7%. The second place is taken by OOO Velikolukskiy pig-breeding complex, the third - by the GK RusAgro, the fourth - by the GK Cherkizovo - 307.9 thousand tons; 307.7 thousand tons; 306.6 thousand tons, respectively, or 6.3% of the market.

Keywords: *meat products, production, export, import, rational norms, federal districts.*

Savelieva S. M., Chirkova E. N., Sadykova N. N., Tretyak D. D. **A FOREST MARTEN HEART ANATOMY (MARTES MARTES)**

The paper examines anatomical characteristics studies of the forest marten Martesmartes heart (Linnaeus, 1758). It finds that this spherical shaped, less often ellipsoidal organ is enclosed in a pericardial bag, which is placed between the lungs. It has a well-defined base that looks up and back and the top facing down and forward. Each atrium forms a well-developed sackartige Ausbuchtung - auricule (the right is larger than the left). The cavities of the right ventricle and the left ventricle have different shapes and walls of different thicknesses, the right ventricle – 5,7 ± 0,02 mm and the left ventricle – 12,9 ± 0,15. The pectoral muscles in the left and right atrium are the same. The papillary muscles of the right ventricle are of cylindrical or conical shape (and additive).

In most cases, the papillary muscles in ventricles are two or three-headed, attached by valve strings. Valve flaps with irregular edges, have no sharp borders. The structure of the right atrioventricular valve is characterised by the presence of three main flaps: angular (2,25 ± 0,85 mm in length, 0,17 ± 0,95 in width, 0,4 ± 0,01 in thickness) and parietal (3,18 ± 0,15; 0,53 ± 0,01; 0,22 ± 0,07), partitioning (3,95 ± 0,57; 1,75 ± 0,29; 0,19 ± 0,01). Stowage (1,75 ± 0,19 mm long, 0,89 ± 0,15 wide, 0,17 ± 0,01 thick) and bulkhead (1,15 ± 0,75; 0,72 ± 0,15; 0,16 ± 0,01) are flaps of the left atriocentric valve. Septomarginals in the left ventricle are most pronounced.

Keywords: *heart, right and left atrioventricular valves, papillary muscles, tendon strings, forest marten.*

ENGINEERING AGROINDUSTRIAL SCIENCE

Aldoshin N.V., Sibirev A.V., Panov A.I., Mosyakov M.A. **INCREASING THE SOWING QUALITIES OF BARLEY SEEDS**

The article talks about the importance of providing the population with high quality and affordable agricultural products. Statistical data shows the production of a high-protein cereal crop - winter and spring barley in farms of all categories in the Russian Federation in the period from 2016 to 2021. A low yield of barley is noted, which indicates potential losses associated with non-standard germination and vigor of seed germination.

Studies carried out with the help of physical methods of influencing the seeds of agricultural plants. This method used ultrasonic action on seed material. A general research methodology provides for the irradiation of seeds with ultrasound to proceed swelling and penetration of oxygen into the seed with the determination of their further germination.

As a result, optimal processing modes were determined, such as ultrasonic frequency f = 48 kHz, oscillation intensity S = 42 W/cm², and exposure time t = 480 s, which make it possible to increase the amount of water adsorbed by the grain. The absorption of water by barley seeds allows faster weight gain by 10...12%. The germination of barley seeds after exposure to ultrasound is oscillatory (sinusoidal) in nature. An increase in seed germination at different frequencies is associated with the presence of a stimulation effect. Data were obtained, that the average value of seed germination of barley variety "TSKhA-4" after exposure, which is B = 80.8 %.

Keywords: *ultrasonic treatment, seed germination, barley seed stimulation, water absorption by seeds.*

Bondarenko A.M., Smolyanichenko A.S., Yakovleva E.V. **HARDWARE FOR WASTEWATER TREATMENT TECHNOLOGY FOR WASHING AGRICULTURAL MACHINERY**

The Rostov region is one of the leading regions in the purchase of agricultural machinery. Every year, the technopark of the Don farms is replenished with about 400 combines, 700 tractors and 2,000 units of other agricultural equipment. Before carrying out repairs or other maintenance operations, all agricultural machinery undergoes an external washing stage. The washing process produces wastewater with high concentrations of surfactants, oils, greases, waxes and other contaminants that make this wastewater toxic to aquatic organisms. The reuse of waste water will reduce the discharge of wastewater into water bodies, thereby preventing surface water pollution. The purpose of this work was to select the most suitable scheme for the treatment of washing wastewater for the possibility of their reuse. In this regard, the existing schemes for wastewater treatment from washing agricultural machinery are analyzed. The most effective scheme for the treatment of highly concentrated wastewater has been identified: preliminary electroflotation followed by disaggregation (phase separation) of contaminants. At the first stage of purification, an electroflotation complex with an electroflotation unit with insoluble titanium electrodes coated with a three-component anode coating (OIRTA) was used. The Pyramida N phase separation unit acted as the second processing stage. The optimal dose of the SKiF reagent was selected to intensify the purification processes. Recommendations on the choice of post-treatment facilities

are given. The experiments were carried out on real wastewater from an agricultural equipment washing point in the Rostov region. The obtained results confirmed the possibility of using purified water for circulating water supply after additional purification and disinfection.

Keywords. *Agricultural machinery, waste water, sewage treatment plants, electroflotation, phase separation, circulating water supply*

Kudryavtsev D.V., Magdin A.G., Pripadchev A.D., Gorbunov A.A., Nesterenko R.A **COMPREHENSIVE PROCESSING OF CROPS USING AN UNMANNED AERIAL VEHICLE FOR AGRICULTURAL PURPOSES**

The paper considers a new method of processing all the necessary surfaces of crops through the use of an unmanned aerial vehicle (UAV). At the moment, the treatment of all surfaces of tall shrubs and individual sections of trees with spot spraying of chemical liquid on a large agro-industrial scale is not possible due to the imperfection of modern methods of processing agricultural crops. The proposed agricultural unmanned aerial vehicle is able to increase yields and bring additional profit to agro-farmers due to spot processing of crops. Ease of operation is the most important advantage of the proposed UAV, special skills are not needed to process crops using this UAV, as, for example, when operating agricultural aircraft and ground equipment. Depending on the type of crops and the characteristics of the local landscape, the proposed agricultural UAV will spray in the vertical direction (from top to bottom) or at a given angle by changing the position of the lever and its further fixation on the rod, as well as processing in the horizontal plane. The degree of direct human participation in the control and management of the UAV is determined based on the choice of the mode of differential application of fertilizers and pesticides for a given site – stationary or dynamic. In an idealized system, the main role of motion control will be assumed by a programmed electronic computer (computer) in the form of a computer capable of correcting the flight and the introduction of chemical reagents in a constant mode, analyzing the readings of instrument sensors. All this can be implemented in practice at the proper level with appropriate financing, and the fruits of such a project in the future will open a new stage of industrial processing of crops and tree crops.

Keywords: *agricultural UAV, agriculture, differentiated application, agricultural crops, chemical liquid.*

Nikolaev V.A.**LIMITING THE ANGULAR SPEED OF THE SEMI-AUTOMATIC GRAIN CLEANING MACHINE**

The main disadvantage of grain cleaning machines with rectangular lattices is the limited throughput due to a logical contradiction. It consists in the fact that as you pass through the sieve, the amount of material to be cleaned on the sieve decreases, and the width of the sieve remains unchanged. At the same time, a significant part of the sieve works inefficiently, since only part of its surface is covered with the material to be cleaned. To overcome this disadvantage, a high-performance semi-automatic grain cleaning machine with lattices representing, in aggregate, an inverted truncated cone that makes vertical oscillations is proposed. The body of the semi-automatic grain cleaning machine rotates. At the beginning of work, depending on the composition of the grain heap, the operator on the control and alarm unit turns on the automatic adjustment mode of the grain cleaning machine. During separation, automatic airflow control is carried out. The flow of grain heap for cleaning is maintained automatically. As a result of previously performed calculations, the following parameters of the grain trajectory after the first touch of the sieve of a semi-automatic grain cleaning machine, the profile of the path on which the grids are based by means of rollers, the optimal time of ascent is latticed at a constant speed, the deceleration time is solved when approaching the upper point of the trajectory, the acceleration time is latticed when moving to the lower position, the time of movement is latticed to the lower position with constant acceleration, angular velocity of the body of a semi-automatic grain cleaning machine, the period of oscillation of the lattices. Analysis of the dynamics of the grain on the sieve is necessary to determine the optimal angle of inclination of the grid, corresponding to the inclination to the horizontal of the forming inverted truncated cone. Let's start with an analysis of the movement of the grain down the sieve at the time of changing the direction of movement of the grid in the lower position.

Keywords. *Cleaning machine, infused truncated cone, vertically oscillating sieve, grain interaction with grill, force of impact on the grain, angle of inclination of the grille.*

SOCIO-ECONOMIC SCIENCES AND HUMANITIES

Baldin K. E. **ZEMSTVO AND AGROTECHNICAL ADVANCES: AGRICULTURAL WAREHOUSES IN VLADIMIR PROVINCE IN THE EARLY 20TH CENTURY**

The article is devoted to the agronomic activity of Zemstvo in Vladimir province. The author examines the work of agricultural warehouses, which were organized by Zemstvo. Most of these agricultural institutions in Vladimir province were created in the mid-1890s according to the following scheme: first there was a main warehouse in the county center, and a few years later - its branches in large villages. With their help Zemstvo introduced into the peasant farm mineral fertilizers, varietal seeds and improved agricultural tools, unknown until then to local residents. Zemstvo developed its own price policy for goods, sold in agricultural warehouses. The main goal of these municipal bodies was not to make a profit, but to disseminate advanced agricultural technology among the peasants. The Vladimir provincial Zemstvo used such a public organization as the Moscow Society of Agriculture to supply the peasants with seed, it had a branch in the city of Vladimir. The greatest demand among the peasants was for grain seeds and plows. All this activities contributed to the technical progress in agriculture in Russia at the beginning of the twentieth century. At this time plows, seeders, threshers, sorting machines, mineral fertilizers, etc. appeared in the farms of many peasants thanks to technical progress.

Keywords: *farming in Russia, Russian Zemstvo, Zemstvo assembly, agronomy, agricultural warehouses, Stolypin reform, agricultural implements, technical progress.*

Kornilova L. V. , Nikolaeva O. A., Smirnova A. N. **FEATURES OF E-LEARNING IN THE PRACTICE OF TEACHING LANGUAGE DISCIPLINES**

The article is about the fact that the system of higher professional education needs constant improvement, in accordance with all the requirements of society and, thus, is forced to respond to the latest transformations in various spheres of life. It provides for the creation of a new concept of meta-education, which justifies radical changes in the education system, especially university education. The use of ICT in teaching language disciplines involves not only the use of technical means, but also new forms and methods of teaching, a new approach to the learning process. This, in turn, obliges the teacher to develop his professional competence and get involved in the so-called "e-learning", i.e. the process of "e-learning". This term is understood as the translation of knowledge and the regulation of the learning process with the help of modern information and telecommunication technologies. If at the initial stage of computerization in the teaching of language disciplines, the use of a computer as a means of developing skills and abilities in exercises was brought to the fore, now it is beginning to be actively used in teaching almost all humanities disciplines, changing its functions depending on the goals, objectives, stage of training, etc. The linguodidactic process includes electronic textbooks, various scientific and educational developments, methodological manuals, electronic dictionaries, encyclopedias, etc. And, of course, the most powerful factor of learning is the resources and means of communication provided by the Internet. Currently, the computer and the Internet presuppose the appropriate training of teachers of language disciplines, who should be able to evaluate the effectiveness of certain resources, as well as participate themselves in the development and implementation of modern distance learning methods in the educational process.

Keywords: *modern information and telecommunication technologies, e-learning, intensification and differentiation of training, development of professional*

competence of the teacher.

Krivolapova E. V., Devyatkina A. P., Egorov A. N. **PHYSIOLOGICALBASIS OF ATHLETES' FATIGUE DEVELOPMENT IN THE CONTEXT OF PHYSICAL EDUCATION AT THE UNIVERSITY**

The paper examines the research on physiological basis of fatigue development in athletic students of Buzuluk Institute of Humanities and Technology (branch) Orenburg State University. It was found that 70% of students from 97% consider to follow a healthy lifestyle, and 27% respondents do not plan to change their habitual lifestyle. Only 50% respondents can continue to do the same physical load as they did before the research. They should pay attention to dietary habits and the role of healthy lifestyles in their sporting activities as well as in everyday life. They have to change the training schedule and increase the rest period so that the body can physically recover from the loads. The rest of the athletes are recommended to be examined by specialists, as the work they do is not commensurate with their state of health. According to the results of the study, the reasons for the athletic fatigue are: lack of a full rest during a day, at the weekends, during holidays (holidays). At the beginning of the year, the athletes kept their bodies fit, as they were well restored, their health was normal, they were well (this was also observed in the general mood of the students). Also, there was an unbalanced diet (protein, fat or carbohydrate deficiency) and training of non-comparable biorhythms of athletes.

Keywords: *Fatigue, Students, Ostberg's test, Romberg's symptom, chronotype, Henchy's sample.*