ABSTRACTS AND KEY WORDS
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AGRONOMY

V. A. Alekseev **THE RESPONSIVENESS OF DOMESTIC AND FOREIGN POTATO VARIETIES ON THE USE OF GREEN MANURE FERTILIZERS**

3-year data of field stationary experience on the reaction of domestic and foreign potato varieties to cover crops and crop rotation are presented. In potato seed production in Russia, there is a trend of promotion (lobbying) of foreign selection varieties by large agricultural firms. These varieties are superior to domestic ones in productivity, responsiveness to the application of mineral fertilizers, appearance and some other indicators. However, the adaptivity or adaptability to local conditions and resistance to pathogens in Russian varieties is significantly higher than foreign ones. This is especially true for potato varieties intended for crisps production. When assessing the quality of any variety, about 50 economically valuable indicators are taken into account: yield, responsiveness to fertilizer, pathogen infectability, crop safety and adaptability in production. Small productions and large potato producers began to use sideral fertilizers and re-planting of potatoes widely. The main task of potato seed production is identifying the advantages and disadvantages of different varieties in different soil conditions. It was found that Kolobok variety exceeded foreign varieties such as Skarb and Germes, in crop yield and quality. The increase in crop yield was due to increase in the amount of cover crops, improved agrochemical and agrophysical soil characteristics, and the adaptability of the domestic variety to permanent cultivation. The marketability and technological quality of the varieties were also different. The Kolobok variety had an advantage, especially in crop rotations. The analysis of economic efficiency shows that Kolobok variety has the highest efficiency when grown in a three-field crop rotation (the highest profit, profitability and cost recovery).

Keywords: *variety , crop rotation, green manures, profit, cost recovery.*

Batyakhina N.A **INTEGRATED APPROACH TO THE USE OF PESTICIDES IN THE TRITICALE AGROCENOSIS**

The transformation of agroecosystems and the increase in the number of dangerous harmful objects can provoke emergencies in the fields. In grain crops, there is an increase in the number of malicious weeds, the pressure of rust and fusarium is increasing, which can ultimately lead to a decrease in the quality of the products obtained. It is necessary to use pesticides taking into account their effectiveness and regulations of application.
In the regions of the Upper Volga region, the area under the new grain crop of spring triticale – an interspecific hybrid of rye and wheat has recently expanded. With the advent of triticale, there is a prospect of increasing the adaptive capabilities of crop production in the Non-Chernozem zone. The ecology of the environment is improved by reducing the pesticide load. The cultivation of spring triticale complements the set of early spring crops, increases productivity, collects valuable protein, and reduces the cost of purchasing fungicides. But the cultivation of triticale culture in Russia has not yet become generally accepted. In this regard, deviations in agricultural technology are allowed, which do not allow the crop to realize its potential. One of the reasons for the lack of harvest is leaf-stem diseases, which can cause losses in yield of up to 32% in an unfavorable weather year.
It was found that the used fungicide Falcon had a healing and preventive effect on triticale plants, increasing their safety for harvesting by 3.5%. The use of the tank mixture provided 13.6% higher plant height, which contributed to an increase in the accumulation of dry matter by 58% higher than the control; 2.1 times the damage to root rot reduced, 1.6 times-septoria and rust, 2.5 times clogging reduced, 17.5% crop productivity increased.

Keywords: *fungicide, triticale, crop rotation link, phytosanitary state of agrocenosis, yield.*

Isaichev V.A., Andreev N.N., Mudarisov F.A. **INFLUENCE OF LIQUID MINERAL FERTILIZERS ON THE PRODUCTION PROCESSES OF**

SPRING WHEAT

The article presents the results of studying the effect of the drug MEGAMIX-PROFI on the production processes of spring wheat plants of the Ulyanovsk 100 variety in the conditions of the forest-steppe of the Middle Volga region. It was found that pre-sowing treatment of seeds with an experimental preparation contributed to an increase in the rate of water access by 4.8 - 14.5% compared to the control variant. The drug MEGAMIX-PROFI contributed to an increase in the survival rate of spring wheat plants in 2018-2020 by 2.9 – 4.3 %, depending on the nutritional background. The largest indicator of sheet surface area was noted in the MEGAMIX – PROFI variant against the background of NPK. Positive effect of experimental preparation on the formation of leaf area is observed in all phases of plant growth and development. The leaf surface area increased by 75.47-3126.80 m2/ha, depending on the experiment variant and the growth and development phase of spring wheat plants. Over the years of research, the increased rate of dry matter accumulation by plants in all phases of growth and development was noted in the MEGAMIX – PROFI variant on a fertilized background. Tillering phase-444.8 kg / ha, the period of release into the tube-2206.9 kg/ha, the earing phase-4402.0 kg/ha, the phase of milk ripeness-6175.3 kg / ha. Under the influence of the drug MEGAMIX- PROFI, against the background of the application of a complex mineral fertilizer, the maximum increase in the growth rate of phytomass occurs on average for 3 years by 0.30 mg/g in the phase of entering the tube, by 0.54 mg/g in the earing phase and by 0.58 mg / g in the phase of milk ripeness. The maximum value of the BPF is observed in the MEGAMIX – PROFI variant against the background of complex mineral fertilizer application, in the phase of entering the tube – 9.43 g/m2, in the phase of coloration-13.6 g/m2, in the phase of milk ripeness – 12.03 g / m2.

Keywords: *spring wheat, mineral fertilizers, photosynthetic activity, production processes, productivity.*

I.Ya. Pigorev, O.A. Gryaznova, D.V. Leonov **THE INFLUENCE OF GROWTH STIMULATORS ON THE YIELD AND QUALITY OF CUCUMBER IN PROTECTED GROUND CONDITIONS**

Growth stimulators Etamon, Radiopharm, Quick-Link, Sprintalga and Razer were studied in the production conditions of greenhouse plant of Seim-Agro JSC. The objects of the study were hybrids F1 Athlete in winter-spring rotation and F1 Mamluk in summer-autumn rotation with the mode of preparations using: seed treatment, fertilization with a nutrient solution and spraying of vegetative plants. Observations revealed increased energy of germination and seedlings, active development of root system and cucumber shoot under the influence of the studied preparations. While studying the influence of growth stimulators on the productivity of cucumbers in protected ground conditions, it was found out that the given preparations increase the number of fruits by 10.9-36.4% in the Athlete hybrid and by 12.9-32.3% in the Mamluk hybrid. The best yield was obtained in the winter-spring rotation of the Athlete hybrid due to using the preparations Quick-Link (28.1 kg/m2) and Sprintalga (26.3 kg/m2). In these variants the number of underdeveloped and sick non-standard germs is the least. The number of standard products under the influence of Quick-Link and Sprintalga increased in the Athlete hybrid from 81.4 to 98.9-99.4%, in the Mamluk hybrid from 94.6 to 99.6-100.0%, respectively. The chemical composition of cucumber in the experimental variants demonstrated changes in quality depending on the growth stimulator used, the hybrid and the growing season of the crop. The results of the conducted research prove and supplement the materials of theoretical knowledge.

Keywords: *growth stimulators, cucumber hybrid, yield, vendibility, chemical composition.*

N. V. Tikhomirov, E. L. Pashin, S. V. Bolnova, T. N. Nesterova **IMPROVEMENT OF TECHNOLOGICAL QUALITY ASSESSING SYSTEM FOR FLAX VARIETIES IN THEIR STATE VARIETY TESTING**

The lowered quality of fiber is associated not only with the violation of the agrobiological conditions of fiber flax cultivation, but also lies in the system of creation and testing before the introduction of new selection varieties into production. This is due to the relationship of fiber quality with breeding and variety testing methods.

The analysis revealed a discrepancy between the method of obtaining trusts used in state variety testing and the one used in practice. Evaluation of new

varieties, carried out in the system "Gossortoset" of the Ministry of Agriculture of the Russian Federation, is carried out according to the results of flax trusts analysis obtained on the basis of water lobes with subsequent testing of the mochentsose fiber. In real production, linen trust is universally obtained by means of dew lobes, and flax mills supply stanza fiber to textile enterprises.
The article presents the results of research on improving the method of preparation and analysis of flax fiber to assess its quality at the stages of state variety testing of flax varieties-long-legged Leader and Dewdrop. It is established that in order to effectively identify the best fiber quality varieties of flax in the system of state variety testing, their technological value must be established by analyzing the flax trust produced in the conditions of flax cultivation for at least two years.

Keywords. *Fiber flax, variety,variety testing, tresta, waterlobe, dew lobe, fiber, quality.*

A.A. Utkin **FEATURES OF CADMIUM ACCUMULATION BY TIMOTHY MEADOW PLANTS FROM PEAT LOWLAND SOIL**
Cultivation of meadow timothy in the conditions of vegetation experiment on lowland peat soil contaminated with cadmium showed that a gradual increase in the concentration of cadmium in the soil negatively affected the formation of plant biomass in all experimental variants, while the lowest biomass was observed at the highest concentration of cadmium - 325,082 mg/kg of soil.
Cadmium showed a high degree of mobility of its compounds in the soil (66,54-88,70%), thus, cadmium was poorly retained by organic matter in peat soil and showed high availability for plants.
The increase in the concentration of cadmium in the soil of the experimental variants was reflected in a significant increase in the content of the pollutant in plants, however, the accumulation of metal was noted at a slower rate than the increase in the soil concentration, as evidenced by the calculated accumulation coefficients, which indicates the protection of plants from the penetration of excessive amounts of metal.
The increase of metal concentrations in the soil of the options led to above 2,65-10,19 times of the provisional maximum permissible level of cadmium in coarse and succulent fodder, therefore, the cultivation of timothy meadow on lowland peat soils contaminated with cadmium, for feeding purposes, in concentrations similar to those in the experience, not allowed, as it creates the risk of poisoning of farm animals.
The calculation of toxicity coefficient showed that an increase in the metal concentrations in the soil led to an increase in its values. The greatest negative effect of the metal concentration in the system: "peat lowland soil-plant" on the reduction of biomass through the accumulation of metal by plants was manifested in 9 variants (200,082 mgCd/kg).
Keywords: *peat lowland soil, heavy metals, cadmium, plant, toxicity, biomass*

VETERINARY MEDICINE AND ZOOTECHNY

S. M. Zavaleeva, E. N. Chirkova, N. N. Sadykova, A. S. Rusakova **MACRO-MICROMORPHOLOGY OF BREAM HEART (ABRAMIS BRAMA)**
The researchers of different sciences, institutes and schools paid a lot of attention to the heart morphological structure study. However, numerous problems according to fish microstructure of different level organization as well as adaptive changes under the influence of environment haven't been studied thoroughly. The interest to morphology of certain heart structures, which interact to form specific mechanisms involved in the regulation of blood flow, has been given insufficient priority. Every organism always needs the normal heart functioning, responding to the interaction of the external environment, which transforms all organs in the course of the historical process. The considered morphological characteristics (topography, mass, shape of the heart), the organization of contractile and conductive cardiomyocytes, structural features of the atrial and ventricular myocardium will help to identify the specific features of the bream heart (Abramis Brama).
It is found that weight of the organ is 7,15±0,11g with a body weight as 3771.23 ± 11.70; its shape is elliptical with a blunt tip. The atrium is dark red and the ventricle is lighter. The thickness of the atrium wall is 0.88 ± 0.11, the ventricle is 3.28 mm. There is a venous sinus, but there is no arterial cone.

The reticulation of the myocardium is clearly traced on the histological sections of the bream atria and ventricle, as a result, of the muscle fibers special arrangement, formed by contractile cardiomyocytes. The diameter of the atrial myocardial cells is 12.50 on average and the diameter of the nuclei is 5.50 microns. The ventricular myocardium forms cells with a diameter as 13.50 ± 0.42 with nuclei - 6.00 ± 0.03 microns. The cardiomyocytes nuclei are large in size with elongated-oval shape.

Keywords: *bream, morphology, heart, myocardium, cardiomyocytes.*

Kavtarashvili A.Sh., Buyarov V.S. **ADVANCED BROILERS CULTIVATION TECHNOLOGY ON MESH FLOORS (REVIEW)**

The article describes characteristics of various systems of broiler chickens growing. Innovative technology of growing broilers on mesh floors is considered in detail. Broiler farming system is the most important factor affecting the productivity, safety and efficiency of poultry meat production. In industrial poultry farming, the following methods of growing broilers for meat are used: on deep bedding, heated floors, mesh floors and in cell batteries. Many disadvantages and economic indicators of growing broilers on litter and heated floors force scientists and practitioners to search for alternative systems for keeping poultry. The technology of growing broilers in cell batteries is an essential reserve for a rapid and significant increase in meat production. With this technology, the number of poultry in the poultry house increases by 2.5-3 times, and therefore the yield of meat per unit of floor area of the poultry house without reducing the safety of livestock and the quality of carcasses. However, due to the lack of conditions in classical cell batteries to meet the physiological and behavioral needs of poultry and, consequently, public disapproval, they are legally prohibited in several US states and in all countries of the European Union. With this in mind, the domestic company TECHNA has developed an innovative technology for growing broilers on MaxGrow plastic mesh floors. The new technology is based on the well-known outdoor poultry housing system, which has been transformed into the concept of a multi-storey poultry house with the integration of modern poultry equipment with the automation of all production systems and processes. The new technology for keeping poultry on mesh floors includes all the advantages of cage and floor systems, and its introduction will allow the production of broiler meat using high standards of livestock welfare.

Keywords: *broilers, growing technology, mesh floors, deep bedding, cell batteries, concept of a multi-storey poultry house.*

Kletikova L.V., Ponomarev V.A., Yakimenko N.N., Brezginova T.I. **MORPHOMETRIC, MICROBIOLOGICAL AND HEMATOLOGICAL FEATURES OF YELLOWHAMMER (EMBERIZA CITRINELLA) IN THE EAST UPPER VOLGA REGION**

The article presents information about the morphometric parameters of internal organs, as well as microbiological and hematological features of a yellowhammer. It was noted that the body weight of a yellowhammer living in the Ivanovo region was 30.34±0.71 g. The length of the trachea varies in narrow limits from 2.80 to 3.02 cm, the length of the intestine-in wide and varies from 17.3 to 22.7 cm. Having ranked the indicators of the mass index of internal organs, it was revealed that intestines have the highest index, spleen has the lowest one. The weight of stomach along with the contents had significant fluctuations. The contents of the stomach consisted of seeds of various wild grasses (middle star, dandelion, meadow bluegrass, plantain and others) and cereals, in particular wheat and rye. The structure of muscular stomach in a yellowhammer is typical of grain-eating birds. The muscular membrane of the ventricle is well developed, with a well-defined tendon mirror. Typical representatives of microflora of birds' gastrointestinal tract are E. coli, Bacillus sp., Streptococcus sp., Staphylococcus sp., Candida albicans and Cladosporium sp. Most of the identified microflora is pathogenic or conditionally pathogenic. The blood type is lymphocytic. The leukogram is dominated by lymphocytes 67-72%, heterophiles account for 23-30%, monocytes, respectively, 3-5%. The blood glucose content is 17.67±2.38 mmol / l, total protein-31.46±1.27 g/l, which provides energy and plastic processes in the body. Transaminase activity is an indicator of normal protein-synthetic liver function. The concentration of AST and ALT in common oatmeal, respectively, is

61.4±3.2 U/l and 60.7±2.8 U/l.

Keywords: *a yellowhammer, East Upper Volga region, morphometry, microbiology, hematology of a yellowhammer.*

T.V. Kozlova, N.P. Sudarev **MEAT PRODUCTIVITY AND QUALITY OF LEATHER RAW MATERIALS OF ABERDIN ANGUS BREED AT DIFFERENT KEEPING TECHNOLOGIES IN THE CONDITIONS OF THE TVER REGION**

In our studies, calves up to 6 months of age were kept with mothers and raised on a sucker under the "cow-calf" system adopted in cattle breeding, mothers' feeding level was the same. Bulls entered the «Avangard» fattening farm in the Tver region after being taken away at the age of six months and were divided into four technology groups. In the process of fattening, a comparative assessment of the quality and quantitative indicators of meat productivity and skins was carried out. The bulls of Aberdeen Angus breed were grown with different keeping technologies. The first group of bulls was kept tethered in the capital buildings, the 2nd group was kept on a fattening ground, the 3rd group was kept in boxes all the year round, without binding in a room with free access to the free-feed yards, the 4th group was kept in a stable period tethered similarly to one group, and in the pasture period grazed on pastures. Studies have established certain intergroup differences in the slaughter rates of controlled bulls. Heavier carcasses and skins are obtained when growing bulls in winter with tethered technology and in summer by organizing foraging with the obligatory feeding of concentrated feed. Beef, obtained from Aberdeen-Angus bulls of different keeping technology, corresponds to the national standard of RF GOST P 55445-2013 "Meat. Beef of high-quality." The skins of animals of all experimental groups were adopted by the first variety and are classified as heavy-uncontoured leather raw materials in accordance with GOST 28425-90.

Keywords: *Aberdeen Angus breed, beef cattle, fattening bulls, way of keeping, live weight, pre-slaughter live weight, slaughter yield, carcass weight, raw leather.*

Mazilkin I.A., Shuvalov A.D., Panina O.L. **INFLUENCE OF PARATYPICAL FACTORS ON REPRODUCTIVE ABILITIES AND DAIRY PRODUCTIVITY OF COWS**

Modern technologies for the exploitation of animals, consisting in the intensive use of cows in order to constantly increase the level of productivity, as well as a number of factors negatively influence the reproductive functions of the broodstock. The article presents the results of the study of paratypical factors (season of first calving, duration of the service period, age of first calving) on reproductive capacity and milk productivity of first-calf cows of black-and-white breed. It has been established that the autumn-winter calving of first-calving cows makes it possible to get higher milk yields from them for the first lactation than during spring-summer calving. Thus, cows that first calved in winter and autumn have the highest milk yield in 305 days of first lactation - 5850 kg and 5983 kg, respectively. Cows that calved in spring and summer had the lowest milk yield per lactation - 5065 kg and 5120 kg ($p < 0.001$). In addition, cows calving in autumn and winter had the best productive qualities. Their first calving takes place 42-59 days earlier, the service period was 26-32 days shorter. The length of the service period and the first calving season have a complex effect. Namely, in all seasons of the first calving, first-calf heifers with a service period of 115-231 days showed the maximum milk yield in 305 days of first lactation - 6199-6423 kg.

Keywords: *paratypical factors, service period, lactation, reproductive capacity, milk yield.*

ENGINEERING AGROINDUSTRIAL SCIENCE

N.V. Aldoshin, N.A. Lylin, M.A. Mosyakov, A.V. Sibirev **RESEARCH OF PHYSICAL AND MECHANICAL PROPERTIES OF WHITE LUPINE PLANT UNDER LABORATORY CONDITIONS**

The article discusses the technological process of harvesting white lupine plants by stripping of standing plants. The basic physical and mechanical properties of the plant have been determined, which are important initial data when choosing the scheme of the harvesting machine and its mechanisms.

Attention is focused on improving the technology of harvesting operations through the use of high-performance modern machines that reduce the material, technical and energy costs of the harvesting process. The sequence of sampling at the entire stage of harvesting at different plant maturity and moisture content is presented. Samples were taken in the experimental fields of the experimental farm for breeding and seed production of white lupine. The article describes methodology for conducting laboratory studies to test the strength of the white lupine stalk to rupture, the bond strength of the pod with the stem under static load application with multiple repetitions of experiments in determining one trait based on the natural diversity of plants. Based on the results obtained, graphs were constructed that determine the dependence of the strength of the stem and the connection of beans with the stem on the degree of plant maturity and moisture. It was determined that by the beginning of harvesting the effort to break the stem is in the range of F = 400 ... 450 H. At the end of harvesting the effort to break the stem is equal to F = 270 ... 320 H, decreases by 1.3 ... 1.5 times. The growth of stem moisture content within W = 65 ... 85% leads to an increase in stem strength by 1.2 ... 1.6 times. Also, with an increase in the moisture content of the stem within W = 65 ... 80%, the bond strength of the beans with the stem increases by 1.4 ... 1.5 times.

Keywords: *stripping of standing plants, white lupine, physical and mechanical properties of a plant, harvesting*

Gonova O. V., Gonova V. A. **DESIGN CALCULATION OF A CENTRIFUGAL PUMPING UNIT TAKING INTO ACCOUNT THE TECHNICAL AND ECONOMIC FEASIBILITY OF PRACTICAL USE**

Every year in the agricultural sector of our country, the need for optimal and economically feasible use of fuels and lubricants is growing. Almost the entire fleet of agricultural machines runs on diesel fuel. Diesel fuel is a product of oil refining. Initially, lighter hydrocarbons-gasoline - are extracted from oil during the cracking process, and then components for diesel fuel are extracted. Its use contributes to a significant saving of material resources, since the same fuel is poured into the tanks of any agricultural machinery without loss of quality and quantity of work performed. A very important practical aspect for optimal consumption of diesel fuel during busy periods of agricultural work is the use of mobile units equipped with pumping units for refueling equipment in the field. The difference between industrial hydraulic systems and domestic ones is a higher efficiency, which is achieved by improving the device. Therefore, there is a need to design pumping units that can be used for agricultural purposes.

Pumps that have stable performance curves with sufficient slope to prevent flow instability and a constant increase in pressure until shut-off are preferred for most pump operating conditions and are used when their parallel operation is established by the consumer. If a single pump does not provide the required head, the pumping unit may consist of several pumps connected in series. In this case, the total head is made up of the heads of each of the pumps at the required flow rate of the liquid in the network.

In this study, a design calculation of a pumping unit for pumping liquid through three parallel pipelines was performed. The pressure required for liquid transportation is determined, and the flow rate for each of the pipelines is calculated. The hydraulic calculation of the suction line was carried out and the permissible suction height was determined. The pump impeller is calculated and its geometric characteristics are determined. The pressure characteristics of the network are constructed. The pump is selected from the catalog of pumping equipment. The time of liquid outflow from the pressure tank is determined.

Keywords: *pumping unit, design calculation, efficiency, cavitation reserve, pressure characteristics, centrifugal pump, technical and economic parameters.*

S.N. Topal, E.L. Pashin, A.V. Orlov

DEVELOPMENT OF A METHOD OF ESTIMATING THE SEPARATION OF TRESTA FOR DETERMINING THE FIBER OUTPUT ON THE SMT-500 MACHINE DURING THE SORT TESTING OF FLAX

The article presents the results of studies on the development of instrumental method for indirect determination of separability flax fibers from wood stems stanaway tresta. The existing methods of control of this quality indicator do not allow to determine its values quickly, since their duration is more than 30 minutes. An accelerated method for determining the separability is necessary to solve the problem of choosing the optimal modes of processing trust stems on a laboratory machine SMT-500, depending on the properties of the processed raw materials when obtaining scrambled fiber in the process of state testing of new varieties of fiber flax. The specified machine is a standard tool for testing the quality of flax seed in accordance with GOST R 53143-2008 "Linen Trust. Requirements for procurement ". The proposal for the use of SMT-500 stems from the need to replace the use of industrial equipment - a crushing and scattering unit when receiving fiber. This is due to the desire of ensuring the unity of control conditions, to reduce its duration, labor intensity and the initial weight of flax stems required for analyzes. For an indirect assessment of the separability index, it is recommended to control the stem diameter and chromaticity coordinates of their surface in the RGB system. With this option, the diameter of the stems will ensure that their decortication properties are taken into account, and the chromaticity coordinates (R, G, B) are the degree of weakening of the connection between the fibrous cover and the wood of the stem by the fungal microflora. By planning the experiment and regression analysis, an equation was obtained that relates the separability index with the chromaticity coordinates and the diameter of the stems. Its adequacy has been proved, which characterizes the good convergence of the calculated and actual values of separability indicator. The approximation error does not exceed 5% Regression equation is planned to be used when creating a computer-based decision support system when choosing the optimal values of the rotational speed of scutching drums and the time of their operation in the presence of information about the initial properties of flax stems.

***Keywords**: flax, stems, tresta, fiber, variety testing, processing mode, SMT machine, separability index, color coordinates of stems, diameter.*

SOCIO-ECONOMIC SCIENCES AND HUMANITIES

Komin A.E., Kim I.N., Borodin I.I. **PROBLEMS OF TRAINING ENGINEERING STAFF IN AGRARIAN UNIVERSITY (ON THE EXAMPLE OF FSBEI HE "PRIMORSKAYA STATE ACADEMY OF AGRICULTURE")**

Level of enterprises development in agro-industrial complex (AIC) is significantly inferior not only to the technical and technological state of foreign industries, but also to enterprises of leading industries of the Russian Federation, such as biotechnology and pharmaceuticals, oil and gas industry. One of the reasons for this lag is low professional training level of engineering and technical workers of these industries. These contradictions are clearly visible when comparing modern requirements set forth in the federal educational standards of higher education, and practical training of engineering and technical staff operating in many Russian universities and based on equipment and technologies of the late twentieth century. This lag has led to the fact that the overwhelming majority of graduates' competencies do not correspond to the expectations of employers and the current level of technosphere development in certain highly innovative enterprises. It can be stated that the current state of Russian engineering and technical contingent of agricultural enterprises threatens not only the future of the country, but also significantly limits the current development of technical potential of these enterprises, in connection with which it is necessary to radically reform the national engineering and technical school. In the current conditions, the higher education system is obliged to respond flexibly to the ongoing transformations in society, so as not to continue to train "sterile bachelors and masters". Of course, the preservation of the old system of training engineering staff is not justified, since the market requires innovative engineers, developers of high technologies and high-tech industries. This demand can be met mainly by graduates of the master's program, whose activities determine scientific, technological and socio-economic progress of society, as well as the very functioning of science-intensive industries.

***Keywords:** engineering training, professional competence, innovative entrepreneurship*

Kornilova L. V. **INTER-SUBJECT RELATIONS AS ONE OF THE COMPONENTS OF THE COMPETENCE APPROACH IN TEACHING A**

FOREIGN LANGUAGE

The article deals with the need to use interdisciplinary connections in teaching a foreign language, which is one of the most important requirements of the modern educational process. The actualization of knowledge from various subjects and their integration contribute to the development of the most appropriate actions in foreign language classes. The paper emphasizes that the principle of intersubject contributes to the implementation of other principles in teaching: activity and consciousness; unity of training and education; systematicity and consistency; the principle of connection of training with future professional activity and others. According to the author, the orientation of the teaching staff to intersubject relations develops in the teaching staff the main line, the general trend, the strategy of the educational process. Intersubject connections in a coordinated collective work can become the principle of constructing a didactic system. In the didactic system, built on the principle of intersubject, all stages of the activity of the teacher and the student are reconstructed. The teaching activity of the teacher and the educational and cognitive activity of students have a common procedural structure: goal-motive-content-means-result-control. Under the influence of intersubject relations, the content of these links and the ways of their implementation become specific. These connections resolve the contradiction existing in the subject system of education between the students ' assimilation of knowledge scattered by subjects and the need for their synthesis, integrated application in practice and in work. The ability to comprehensively apply knowledge, synthesize it, and transfer ideas and methods from one branch of knowledge to another is the basis for a creative approach to the scientific and practical activities of a university graduate in modern conditions.

Keywords: *intersubject communications, educational needs, practice-oriented training, construction of didactic system*

A.A. Soloviev **IVANOVO REGIONAL VOLUNTARY SOCIETY OF HUNTERS IN THE 1940–1950 YEARS**

The article is devoted to the Ivanovo Regional Voluntary Society of Hunters, which preserved and restored the main hunting grounds of the Ivanovo region immediately after the end of the Great Patriotic War. The main activities of this society of hunters in the 1940-1950 years are analyzed. The article shows the contribution made by the hunting organization to the preservation and development of the hunting and fishing resources of the region. The role of hunters in the restoration of many species of animals and fish in the region is reflected. The history of the development of hunting dog breeding in Ivanovo and the region is studied. After the most difficult war, enthusiastic hunters had to restore the hunting economy of the Ivanovo region almost from scratch. The old ties were broken, the number of wild animals and birds was significantly reduced, and no rules of hunting and fishing were practically observed. It was the members of the Ivanovo Voluntary Society of Hunters who did a great job to normalize the situation in the hunting and fishing grounds. Already in the first post-war years, they reasonably started talking about the need for mass biotechnical activities in the forests of the Ivanovo region.

The article analyzes the first post-war legal acts regulating hunting and fishing, as well as aimed at preserving and increasing the number of commercial animals and fish. All wild animals were declared state property. Only commercial fishing for personal consumption was allowed. Individual fishermen were allowed to fish with fishing tools only on separate reservoirs, but with the condition of mandatory delivery of fish to the state under contracts. The article emphasizes the great contribution of the members of the voluntary society of hunters to the process of destroying wolves, the damage from which to the national economy was estimated in the hundreds of thousands of rubles. It is noted that in addition to the issues of conservation and reproduction of fish and wild animals, the society of hunters actively contributed to the development of «blood» hunting dog breeding.

Keywords: *hunting, society of hunters, hunting grounds, fishing, hunting dog breeding, Ivanovo region.*

L.E. Tinkchyan **THE IMPROVEMENT OF LATIN STUDYING INTEREST FOR THE STUDENTS OF VETERINARY FACULTIES OF AGRICULTURAL HIGHER SCHOOLS**

This article is devoted to the improving of the students' interest to Latin studying on veterinary faculties of agricultural institutions of higher education. The position of the discipline in training programs for would-be specialists in «Veterinary», « Veterinary expertise», «Small domestic and exotic animals' diseases» is determined. The ways of teaching Latin with the view of the increasing of its attractiveness for students as a means of competitive specialist educating are considered. Both general didactical principles of new language presentation and specifical features of medical and veterinary students training are considered as applied to agricultural institutions of higher education. The main peculiarity of professional training on veterinary faculties of agricultural higher institutions is prevailing of lexical aspects over grammar ones unlike teaching of Latin for lawyers, philologists and botanists. The order of grammar aspects such as verb, noun, and adjective is shown to be connected with the applied professional phenomena like recipes making, diagnosis discussing and anatomy studying. Particular attention is paid to the necessity of comparing of introduced lexical units with both Russian language and studied foreign language. The conclusion is made that this comparison enables the students to use Latin terms, names of organs, diseases and medicines accurately. Of great value is also the investigation of the principles of transliteration of medicine names. The author stresses the point that conscious and motivated studying of Latin is one of the conditions of competitive and ready for continuous self-education specialists.

Keywords: *motivation, grammar, vocabulary, specific terms, frequency of grammar phenomena, language aspects.*

Torikov V.E., Ivanyuga T.V **SUBSISTENCE MINIMUM OF THE POPULATION: ESSENCE, PROCEDURE FOR ESTABLISHMENT AND PURPOSE**

The subsistence minimum is the minimum level of income that is considered necessary to ensure a certain standard of living in a certain country. According to the Law of the Russian Federation "On the subsistence minimum in the Russian Federation" dated 24.10.1997 No. 134-FZ, the value of the subsistence minimum is the value of the consumer basket, as well as mandatory payments and fees [4]. Since the beginning of this year, the cost of living per capita has been set at 44.2% of the median per capita income for the previous year [5].

The subsistence minimum is intended to assess the standard of living of the population when developing and implementing regional social programs, providing the necessary state social assistance and providing social support measures to poor citizens, forming federal budget and budgets of the constituent entities of the Russian Federation, other goals established by federal law. Therefore, the living wage is a key indicator in distribution of the state social assistance to the population, officially designates poverty line, on its basis the minimum wage (MW) and the minimum amount of a work pension is established.

The article discloses the essence and main functions of the indicator, the procedure for setting up by 2020 and the changes that entered into force on January 1, 2021; analyses the dynamics of the subsistence minimum in the Bryansk region, its variation in the context of municipal districts, the level of poverty in the region based on the study of the differentiation of incomes of the population; The factors influencing poverty and measures contributing to the improvement of the living standards of the population in the region are cited.

Keywords*: subsistence minimum, consumer basket, minimum wage measures, average per capita income, poverty level.*