

AGRICULTURE. PLANT CULTIVATION

**Melnyk A. V.** Use of cluster analysis in the selection of varieties and hybrids of spring rape for cultivation in the Left-Bank Forest-Steppe Ukraine. // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 6–11.

Spring rape varieties and hybrids suitable for cultivation in the northern part of Left-Bank Forest-Steppe Ukraine have been identified: PR45G72, PR45G73 hybrids, Siesta and Haydn, Olga, Aira, Baikal, Maria, Terra, Ataman varieties, which ensure the yield of more than 1.6 t/ha of seeds and oil yield of more than 0.6 t/ha. According to the results of cluster analysis several groups of varieties and hybrids (clusters) have been defined, namely: Aira and PR45G73 belong to the first group, the second group contains Mykitinetskyi and Ataman, the third – Baikal and PR4572, the fourth – Haydn and Terra – both are the selection of German firm "Norddeutsche Pflanzensucht Hans-Georg Lembke KG", the fifth cluster may contain Obrii and Oksamyt. While selecting the varieties of rape a producer is not recommended to use two or more accessions selections of one originator out of a single cluster, because in the same conditions they will respond similarly.

**Hareba V. V., Poznyak O. V., Hareba O. V.** Storage of mother roots of carrot breeding forms. // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 12–13.

The modified method of storage of mother roots of carrot breeding forms, at the heart of which lays the task to minimize the losses of roots during winter storage and receiving of high-quality stock seeds of desired combination in the process of breeding, is considered.

**Filonenko S. V.** Productivity and process quality of sugar beets root-crops based on foliar application of growth regulator «Mars-1» // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 14–18.

The results of biennial studies of the influence of foliar application of growth regulator «Mars-1» on productivity of sugar beet of hybrid Ivanovsko-Veselopodolyanskii MS84 and technological qualities of its root-crops in production conditions are described. As a result of the carried out researches it was established that the growth regulator «Mars-1» on sugar beet crops must be applied twice: the first time in phase of 4 pairs of leaves, the second – in phase of closing of the leaves in the row-spacings. Application doses - 0,8 litres/ha.

**Herman N. N., Marenych M. M.** Quality of soft winter wheat and ways of its improvement // News of Poltava State Agrarian Academy. – 2013. –

№ 3. – P. 19–22.

The analysis has found that nitrogen fertilization on the background  $N_{50}P_{50}K_{50}$ ,  $N_{75}P_{75}K_{75}$  and seed pre-inoculation by growth-stimulating and biologically active substances («Pennant» (120 ml/t) and «Agate-25K» (60 g/t), «Polimiksobakteryn» (150 ml/t) and «Diazofit» (150 ml/t) increases the weight of 1000 grains, nature, protein content and gluten. According to a scientific study there was established a high increase in the mass of 1000 grains, nature, protein content and gluten of soft winter wheat in the application of bacterial preparations polimiksobakteryn and diazofit at a dose of 150 ml/t.

**Koval V. V., Natalochka V. O., Tkachenko S. K., Minenko O. V.** Present condition of boron supply in soils of Poltava region. // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 23–25.

The publication presents the results of long-term studies and summarizes the current condition of soil fertility of agricultural land in Poltava Region. The dynamics of providing of soils of the Poltava area with boron is analyzed and the recommendations in relation to their further stopping of degradation and renewal are given. Laboratory researches during 2001–2010 have defined, that maintenance of boron in soils of area for two last rounds of inspection did not almost change. After the data of the VIII round of inspection, average content of boron is 1,05 mg/kg of soil, against a 1,11 mg/kg in the IX round.

**Vdovenko S. A.** Formation of harvest oyster mushroom by intensive cultivation method // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 26–29.

The features of the production of two strains of oyster mushroom on substrates made of straw, wheat, barley and peas are described. The features of the fungus fruiting and obtaining of commodity products in greenhouse are established. Research has established that the pea straw should be used for the substrate during oyster mushroom cultivation. This substrate is characterized by rapid onset of fungus growth and development phases, increasing the overall productivity and improving the marketability of products.

**Kiva O. V., Gribinichenko V. V.** Research of ultrasonic treatment of water on the germination of sugar beet seeds // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 30–31.

Experimental studies have been conducted to determine the effect of ultrasonic pre-treatment of water on germination and vigor of sugar beet seeds. Experimental studies have been conducted to

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determine the effect of duration of treatment on the germination energy. The results of the conducted experimental tests and obtained characteristics of the process of seed germination in plain water from the municipal water supply and in water that was previously subjected to ultrasonic treatment are presented, and their comparative analysis is conducted.

**Novitska N. V., Pilipchuk M. Yu, Sitar O. V.** Productivity as an integral indicator of efficiency of nanometal application in the soybeans growing technology // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 32–36.

The results of studies of soybean yield on black soils of typical steppe of Ukraine, depending on the method of application and concentration of the solution of complex multi-component metal nanoparticles. It is established that treatment of soybean seeds before planting by nanometal solution at a concentration of 240 mg/L and additional spraying of crops in the budding stage is effective in the soybean growing technology. Using nanometals for pre-treatment of soybean seeds in a concentration of 240 mg/L in the norm of 0,11 L/ha of seeds and additional spraying of crops with a solution at a concentration of 240 mg/L in the budding stage at the background of mineral fertilizers application in the norm of  $N_{60}P_{60}K_{60}$  provides increasing of crop yield by 1,5-2,5 %.

**Zabolotnaya A. V., Zabolotnyi A. I.** Formation of some indices of yield structure of spring wheat under application of herbicides «Lintur 70 WG» and plant growth regulator «Emistim C» // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 37–40.

The formation of such indices of yield structure of spring wheat as the number of productive stems,

productive layering, quantity and mass of grains in the ear under the application of herbicide «Lintur 70 WG» at the rate of 120, 150 and 180g/ha both separately and in tank mixtures with plant growth regulator «Emistim C» was researched. It was established that the application of optimal herbicide rate promotes the improvement of these indices and their higher level is achieved under the joint application of 120 g/ha of «Lintur 70 WG» in the tank mixture with Emistim C. The application of maximum herbicide rate (180 g/ha) both separately and in the mixture with «Emistim C» has inhibitory effect on spring wheat plants which results the decrease of the studied indices of the yield structure of the crop.

**Kryzhko A.V., Kuznetsova L. N.** The effect of insecticides on peroxidase and polyphenoloxidase enzyme activity in leaves of potato plants // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 41–44.

It is established that the enzyme activity of peroxidase and polyphenoloxidase in potato plants leaves depends on the type of the insecticides and the term of preservation on the leaf surface. Under the bioinsecticides based on the strains *B. thuringiensis* 994 and 787 it has been noted an insignificant and short increase of the enzyme activity after 6–8 days after their application. It may be reasonable phytoimmunological response of plants on the preparations processing or it can evidence the plants ability to keep stable oxidative metabolism and increase the adaptive capacity of plant organism. The plants processing by the chemical insecticide Calypso do not promote the formation of nonspecific resistance in plants throughout the period of research.

## AGRICULTURE. ANIMAL HUSBANDRY

**Voloshchuk V. M., Zamykula V. V., Beresovskiy M. D., Pidtereba O. I.** Problems of the rational using of pedigree resources in Poltava region // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 45–48.

The questions of the cause of ineffective work of pedigree enterprises, their presence and necessary number for effective annual production of 300 000 heads are examined in the article. The data, which show the dependence of a structure of selective industrial pyramid from the level of technological indexes, are given. The prognosis of a change of the structure of industrial pyramid is carried out by the application of information systems and the optimal variant, which will be applied at planning of annual amounts of the production of pig products on the three breads base, is chosen.

**Palchik O. A., Degtyareva E. A., Panchishnyi M. A.** Feeding of clawed crayfish by the root plant biomass of the higher plants as a mono-diet // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 49–53.

The article contains results of trial testing fodder for crustaceans in the form of the root biomass of higher terrestrial plants as a mono-diet. Test results indicate that feeding of root biomass of higher terrestrial plants is more effective than the mixed type of food. Among the studied variants the best biometrics of crayfish was recorded during feeding by the root mass of lettuce. The study has found that when you place in an aquarium the root of higher plants, the chemical properties of water are gradually improving, that is, terrestrial higher plants as well as water can purify the water.

VETERINARY MEDICINE

**Borysevuch B. V., Lisova V. V., Kryshchop M. S.** Microscopic changes in the kidneys and myocardium of chickens with infectious laryngotracheitis // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 54–55.

The results of histological studies of kidneys and myocardium of chickens that died of infectious laryngotracheitis have been shown. It was found that circulatory disorders in the form of expansion and overflow of blood with blood vessels of body stroma, extra serosal capillary glomerulonephritis and degenerative changes and destruction of epithelial tubules are registered in the kidneys. In the myocardium the leading pathology was granular dystrophy of muscle cells. In addition, fragmentation and disorientation of muscle fibers was registered. In the epicardium and endocardium there were no microscopic changes.

**Kozlovska G. V., Skybitskyi V. G.** Control of biotopes microflora of animal organism – an important element in receipt of quality and safe production // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 56–58.

In order to find ways to prevent microbial contamination of animal products, the antagonistic effect of known and newly selected by probiotic characteristic of strains of lacto- and bifidobacteria on the strains of exciter of intestinal yersiniosis of humans and animals – *Yersinia enterocolitica* was studied. It was found that antagonistic activity against the latter and other tested test-cultures is characteristic as for some of the known strains of lacto- and bifidobacteria used in the process of obtaining of animal products, and for the newly isolated and selected by probiotic characteristic strains.

**Karpovskiy V.I., Maksin V.I., Kryvoruchko D.I., Trokoz V.O., Trokoz A.V., Shesterynska V.V.** // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 59–61.

Based on the research, the results of which are described in the article, the use of raw material for the production of iodine products «Jodis-concentrate» as an effective prophylactic and treatment drug in growing pigs is recommended. This makes it possible to increase the number of red blood cells in the blood of animals that improves indicators of the reactivity of their organism. Use of the drug «Jodis-concentrate» in a dose of 0.12 mg per 1 kg of body weight, 2 times a day for 40 days to the pigs increases the number of red blood cells, especially in animals of severe types of higher nerv-

ous activity, which increases the resistance of the organism.

**Lukyanova G. A.** Comparative description of anti-varroatic efficiency of vegetable acaricides in different periods of the year // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 62–64.

The analysis of anti-varroatic efficiency of herbal acaricides (powder of wormwood bitter grass, powder of eucalyptus leaves, smoke of horse-radish root) is conducted in the processing of bee families before the main nectar flow (summer) and before forming of winter club (autumn). Acaricidal processing with the use of vegetable preparations on the basis of wormwood bitter grass, eucalyptus leaves and horse-radish root is low effective at autumn treatment against a varroa invasion. Powder of wormwood bitter grass is an effective environmentally clean mean for a fight with varroa before the main collection of honey. Powder of eucalyptus leaves possesses 55,94±10,21 % by efficiency in the processing of bee families before main collection of honey. Horse-radish root is low effective for a fight against a varroa invasion.

**Zamazii A. A.** Morphometric parameters of growth and development of fetus of cows and amino acid composition of amniotic liquid // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 65–68.

The data of dynamics of fetus growth and development indicators, and also amino acid composition of amniotic liquid of clinically healthy newborn calves are given. It is established that since the end of the first month of growth and embryo development until the end of the second one its body weight increased in 64,71 times ( $p < 0,001$ ). At the end of the first month of growth and development the embryo mass was only 0,68±0,01 g, amnion volume was 7,08±0,12 ml, and allantois – 45,40±1,40 ml with a trunk length of a fetus of 0,92±0,01 centimeters. Increase of weight of a fetus on months of growth and development decreases from 64,71 times to 1,45 times, and actually the mass of a fetus body increases from 0,68±0,01 g to 28700,0±5,29 g in comparison with the last month of its growth and development.

**Lyasota V. P., Sidnichenko I. V.** Preclinical study of Mikovitam influence on laboratory rats // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 69–72.

In the article the data of Mikovitam influence on the metabolism of white rats are stated. It is established that application of Mikovitam in a dose of 0,9 g promotes increase in haemoglobin at 2,7 %, erythrocytes at 4,4 %, the total protein – 2,4 %, and also

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increases the weight of white rats on 10,4 % compared with animals of a control group. The differences in glucose, the total lipids and cholesterol concentration and aminotransferase activity were not established. It is offered to study bioactive compound, as a supplement to feed compound of a livestock for activation of natural resistance level, metabolic processes and growth intensity.

**Panikar I. I., Goralskyi L. P.** Special features of immune morphological formation of 9 days old piglets organism // *News of Poltava State Agrarian Academy*. – 2013. – № 3. – P. 73–76.

Partly activity of cells with markers CD79 (B-lymphocytes) in the lymph formations of lymphopoiesis and a high concentration of cells on the surface of the mucous membrane of the small part of the intestine shows the immaturity of their immune humoral factors of 9 days old piglets and the importance of maternal immune bodies in the life of newborn animals. The activity of lymphocytes with surface markers CD3 (lymphocyte tissue) is more expressed in the lymph nodes and lymphoid formations of the intestinal wall, feature of this process is the focal character.

**Kulnych S. N.** «Trifuzol» influence on healing of boars after castration wounds // *News of Poltava State Agrarian Academy*. – 2013. – № 3. – P. 77–80.

On the basis of dynamics of morphological researches of blood the results of efficiency of intraorbital injections of 1,0% solution of «Trifuzol» at a dose of 5 ml per one animal are presented. It is established that after non-permanent introduction of the preparation in post surgery period on the seventh day, decrease in the number of white blood cells with simultaneous increase of granulocytes percentage in the leucogram is registered. Changes in the composition of red blood cells is characterized by a decrease in the number of erythrocytes on 9.4% and on 12% of such parameter as distribution of erythrocyte size.

**Kyrychko B. P., Zvenigorodska T. V.** Biochemical parameters of blood and oral liquid for chronic generalized periodontitis treatment in domestic cats // *News of Poltava State Agrarian Academy*. – 2013. – № 3. – P. 81–84.

It was established that for chronic generalized periodontitis in domestic cats there is an increase of total protein ( $P < 0,001$ ),  $\gamma$ -globulin ( $P < 0,001$ ), glucose ( $P < 0,001$ ) and serum total protein ( $P < 0,001$ ) and glucose ( $P < 0,001$ ) in oral fluid compared with clinically healthy cats. The combination of conservative and operative treatments of chronic generalized periodontitis in dogs of three research groups has a positive effect and reduces the content of total protein, glucose and  $\gamma$ -globulins. However,

the best results were obtained in four experimental groups of animals, which in a complex of therapeutic measures used osteotropic drug «Collapan».

**Kravchenko S. A.** The use of «Lorakson» for the treatment of dogs with pneumonia // *News of Poltava State Agrarian Academy*. – 2013. – № 3. – P. 85–87.

Research has found that the use of antibiotics «Lorakson» to treat pneumonia in dogs is accompanied by normalization of the clinical condition of sick animals and some morphological and biochemical parameters of blood. After injection of «Lorakson» intramuscularly at a dose of 30 mg/kg twice a day for 7 days the general condition of sick dogs improves, appetite reduces and fever disappears on the second day. The number of leukocytes decreases to the limits of the parameters of the clinically healthy animals, rates of protein metabolism, namely content of general protein and globulin particles, on the seventh day normalizes.

**Obuhovska O. V., Rudenko E. P., Matyusha L. V., Popova O. N.** Protein fractions of blood serum in chickens, vaccinated with inactivated vaccines against respiratory mycoplasmosis of poultry // *News of Poltava State Agrarian Academy*. – 2013. – № 3. – P. 88–91.

It is proved that the double intramuscular introduction of inactivated vaccines against respiratory mycoplasmosis of poultry will help to increase albumin and  $\gamma$ -globulin in the blood serum of chickens, indicating activation of the immune system. The use of a vaccine based on inactivated bacterinum increases to 47.0% albumin level and  $\gamma$ -globulin to 91.9% on the 21<sup>st</sup> day after the second injection. Using by a similar scheme of subunit vaccine based on the unintegrated bacmass increases by 39.6% albumins level and  $\gamma$ -globulins by 84.2%, respectively.

**Muzyka V. P., Stetsko T. I., Padovskyi V. N., Pashkovska M. V., Goloborodko T.** Effectiveness of a new antimicrobial agent cefinel in the treatment of respiratory diseases in pigs // *News of Poltava State Agrarian Academy*. – 2013. – № 3. – P. 92–95.

The results of the studies of microorganisms' sensitivity, pathogens of respiratory diseases in pigs to cephalosporin antibiotic of the III generation of ceftiofur were shown. The obtained results showed a high sensitivity of bacterial isolates, allocated from diseased pigs, to this antimicrobial agent. Testing in a production environment of a new antimicrobial agent Cefinel, the active substance of which is ceftiofur showed its high therapeutic efficacy in the treatment of respiratory tract infections of bacterial etiology in pigs.

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**Tsynovii O. V.** The impact of disinfectants on clinical, biochemical and hematological parameters of broiler chickens // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 96–99.

It was found that the use of drugs «Neochlorine» at a concentration of 1% at a rate of 0.04 l/m<sup>3</sup> and «Maksysan» in the concentration of 0.05–0.1% at a rate of 0,02–0,04 l/m<sup>3</sup> with the purpose of disinfection areas do not affect negatively on strength of humoral immunity, clinical biochemical and haematological indices of broiler chickens. The results of bacteriological, biochemical, haematological and serological studies of broiler chickens within six weeks of cultivation give reason to recommend both products for introduction into poultry farms.

**Prokopenko T. O.** the improvement of the system of veterinary radiological monitoring of radioactive contamination of raw materials of animal and vegetable origin on territory of Ukraine // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 100–103.

An integral component of radiation safety in the 25th year of overcoming the consequences of the Chernobyl disaster is the control of radionuclides in agricultural raw materials and feed. The basis of radiation safety is radiological supervision and monitoring of radioactive contamination of raw materials of animal and plant origin and prevention of radionuclides in the human body and animals. Implementation of veterinary radiological monitoring

will ensure efficient use of existing organizational structures and means for observation of objects of veterinary supervision.

**Skryl V. Y.** Efficiency of ultraviolet intravascular laser irradiation of blood in the treatment of horses with injuries of the musculoskeletal system // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 104–106.

The results of the effectiveness of the use of ultraviolet blood irradiation intravascular laser treatment for treatment of horses with injuries of musculoskeletal system by the dynamics of clinical indicators are presented. It is proved that five time irradiation of blood once a day lasting ten minutes in combination with local rubbing cream for joints «Alezan» compared with only its local application is more efficient method, as tendency for rapid disappearance of lameness and signs of inflammatory reaction are recorded.

**Korchan L. M., Kornienko M. V.** Strongyloidiasis in goats. // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 107–110.

The data concerning the incidence, age of strongyloidiasis dynamics in goats from individual farms in Lubny district, Poltava region (EI – 42 %, II – 147,2 eggs in 1 g of feces and 232,5 larvae in 5 g faeces), hematological changes and the effectiveness of anthelmintics macrocyclic lactones – ivermektin 1 % and combination therapies – kombitrem and rafenzol for this invasion were investigated.

## ECONOMICS

**Samojlik M. S.** Ecological ground of socio-economic development of rural territories for account of creation of ecological settlements // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 111–116.

The ecology and economy estimation of regions of Ukraine is carried out on the basis of model a “natural loss is ecology, social and economy factors” and certain directions of improvement of organizationally-economic structure of ecological settlements in the context of steady development of rural territories. Taking into account, that the standard of living of population in ecological settlements is determined their health level, certainly complex of priority measures on proceeding in the components of quality of natural environment, it is conducted division of regions of Ukraine to direction of improvement of the system of ecologically safe development.

**Okselenko N. A.** Peculiarities of application of longitudinal data models for agricultural enterprises // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 117–120.

The work is devoted to the improvement of the current assets of management of the agricultural enterprises using the longitudinal data models. The system of econometric ANCOVA-models for agricultural enterprises is developed. The economic interpretation of all characteristics of the connection is given and the possibilities of the models use in practice are showed. Significant proportion of current assets of agricultural enterprises constitute reserves, accounts receivable, current biological assets. It was proved that the problem of the effective current assets management is at the same time a problem of profit management..

**Halatur S. N.** Peculiarities of the functioning mechanism of investment market in Ukraine // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 121–124.

The nature and characteristics of the functioning mechanism of the investment market, the legal and institutional basis of regulation, the increasing of capacity mechanisms to ensure a favorable investment climate in Ukraine are examined. Two approaches to determine the place and role of

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investment in economic system that is directly related to the definition of «investment market» have been generalized. There has been defined that one of the priorities of economic policy in Ukraine is to stimulate investment, which is closely connected with the evaluation of the prediction of the investment market.

**Gordievych O. A.** The influence of production costs on the performance of dairy cattle in the region // *News of Poltava State Agrarian Academy.* – 2013. – № 3. – P. 125–129.

Grouping of agricultural enterprises of Rivne

region, depending on the cost per one cow was conducted in the article. The studies mathematical models of correlation between the level of costs and related performance indicators using their graphic images. In the result of studies mathematical models of correlation between the level of costs and the relevant output indicators using their graphic images were built. By the analysis of mathematical models amount of expenditures, causing a high performance, low cost and best possible level of cost recovery on a cow in agricultural enterprises in the region were established.

## TECHNICAL SCIENCES

**Arendarenko V. M., Charak R. M., Samoilenko T. V.** Rationale of construction of hydro-spraying installation of tunnel type // *News of Poltava State Agrarian Academy.* – 2013. – № 3. – P. 130–134.

Functional diagram of hydro-spraying installation of tunnel type was substantiated. The benefits of this installation in the process of collecting and destroying the Colorado potato beetle were given. The necessity of introducing the functional scheme of the jet pump for pumping the working fluid of the trays tunnel chambers was substantiated. Research has found that increasing of the speed of the working fluid at the outlet of the nozzle jet pump depends on the ratio of input and output nozzle diameter. Using the equation of conservation of the fixed costs of working fluid, exit velocity of the working fluid from the nozzle of the jet pump hydro-spraying installation is theoretically grounded.

**Radionenko V. M., Pyankova Y. V., Kochetov V. P.** Features of lettuce storage in a container with a modified gas medium // *News of Poltava State Agrarian Academy.* – 2013. – № 3. – P. 135–138.

It was found that the modified gas medium is formed as a result of gas exchange between lettuce leaves in the closed space of the module, as well as between this medium and the outside air through the membrane, material of which has selective

permeability for gas medium components. The conducted studies confirm that the cold storage technology with the use of modified gas medium (MGM) as an additional factor of influence is an effective means of reducing losses and increasing the duration of shelf life of perishable vegetable products at the existing refrigerators AIC of Ukraine. The obtained results indicate the feasibility of using modified gas medium (MGM) to increase the shelf life of perishable products of plant origin, since the use of MGM in existing refrigerations does not require any structural changes and additional equipment.

**Skakalina E. V.** The approach to solving the problem of agroholding logistics optimizing // *News of Poltava State Agrarian Academy.* – 2013. – № 3. – P. 139–144.

The paper presents a brief analysis of the use of information technology in the agricultural area. The possibility of improvement of management of logistics implementation process of large agricultural holdings through the use of an effective method of optimal solutions constructing for generalizations of the assignment problem is shown. A new class of discrete optimization problems is presented. The attention is drawn to the intensive development of logistics in foreign countries on the basis of use of modern computer technologies.

## THE YOUNG SCIENTISTS PAGE

**Shakaliy S. M.** Yield and quality of winter wheat depending on the mineral nutrition // *News of Poltava State Agrarian Academy.* – 2013. – № 3. – P. 145–148.

The investigation data of influence of different norms of mineral fertilizers on productivity and protein content in wheat grain mild winter are presented. It is established that the application of fertilizers has an impact on the increase of productivity of grain and contributes to an increase in protein content in grain. Using correlation analysis a close relationship between yield and protein

content of winter wheat ( $r=0,80$ ) is established. Winter wheat yield considerably changes from weather conditions during vegetation period and norms of mineral nutrition. The best results are for the full protection of plants + Basfoliar 36 Extra.

**Shevchenko I. M.** Changing the labile phosphorus contents in the soil using different fertilization and cultivation systems // *News of Poltava State Agrarian Academy.* – 2013. – № 3. – P. 149–152.

It was established on the basis of longstanding field surveys that the usage of mineral and organic

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fertilizers containing the increased portion during crop rotation in the arid submontane – steppe zone leads to the rising of the labile phosphorus contents in the soil. Method of tillage, turnover and mixing factor influence in part the phosphate rate because the allocation of plant rests and fertilizers in the soil depends on them. When using longstanding nonmoldboard tillage the growth rate of phosphorus contents in the soil in the upper layer is less than the rate of drawdown of this element in the lower layer.

**Shevnikov D. M.** Influence of mineral fertilizers and biologics on grain quality of wheat hard furious // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 153–157.

Application of mineral fertilizers and inoculation of seed of wheat hard furious by biologics positively influenced the physical indexes of quality. The nature of wheat grain was more on areas with inoculated seeds by diazofit and polimiksobakteryn on the background of a fertilizer «straw + N<sub>10</sub> on the ton of side products» (789 g/l); for the use of these two preparations separately, there was got, accordingly – 788 and 792 g/l, control (without fertilizers and inoculation) – 762 g/l. By introduction of mineral fertilizers N<sub>45</sub>P<sub>45</sub>K<sub>30</sub> the nature of grain without inoculation was 781 g/l, and by its application by polimiksobakteryn – 783, diazofit – 786, by compatible use of these two preparations – 786 g/l.

**Fesenko A. G.** The state of surface waters of Poltava region (2005–2011) // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 158–161.

Problems of quality and safe water supply in Poltava are too painful, due to both natural and man-made factors. As a result of human activities aquatic environment is contaminated with harmful substances the most. The environmental situation in the Poltava region tends to snag that is largely caused by the problems of water: water consumption of low quality, the use of bodies of water contaminated by insufficiently treated sewage and not disinfected wastewater. As you know, the Poltava area is fully located in the basin of the Dnieper. In the region 45 companies that pollute the water pool works.

**Shkurko V. S.** Efficiency of fertilizers and growth stimulators application on malting barley crops // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 162–166.

Analysis of economic indicators of the experiment in which the effect of precursors and fertilizers were studied, showed that a high level of profitability was recorded in the experiments, which were placed after sugar beet and on which «Nutrivant Plus malting barley» (71.8%) was used. In the part of the experiment, where the predecessor was the maize on grain, the best effect has also been achieved on the variants on which a complete fertilizer was applied. Application of «Nutrivant Plus malting barley» can significantly reduce the cost of production compared to the control without fertilizer and options using N<sub>30</sub>P<sub>30</sub>K<sub>30</sub>. Effective use of growth stimulators was mainly in cases where the plants were fertilized with «Nutrivant». The best results were achieved by using drugs «Nano Gro» and «Vitazim». Application of growth stimulators can increase performance of profitability and net income almost twice, but the action of drugs is largely corrected by the selected system of fertilizing crops. On crops of barley, which are fertilized with mineral fertilizers, it is advisable to use drugs «Vitazim» and «Nano Gro».

**Kytsenko V. P.** Investment aspects of innovative development of agribusiness // News of Poltava State Agrarian Academy. – 2013. – № 3. – P. 167–171.

The necessity of innovation and investment development of agro-industrial complex of Ukraine, as one of the leading sectors of the economy is substantiated. The role of science as a source of innovation is defined. The prospects of biological vector of development of agricultural production in general, and the use of drugs on the basis of beneficial soil microorganisms in particular are highlighted. Innovative advantages of microbial preparations use as industrial means whose value increases especially in the economic crisis are presented. On an example of a specific innovation project the effectiveness of investments in the production of agricultural microbiology is investigated.

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