

AGRICULTURE. PLANT CULTIVATION

Kalinichenko A. V., Pisarenko P. V., Minkova O. H. Special raw material zones as an element of gradation of the agrarian enterprises' eco-friendliness // News of Poltava state agrarian academy. – 2014. – №4. – P. 6–14.

The basic legal framework for determining the appropriate level of ecological farms has been analyzed. We consider a special raw material zones as one of the elements that gradation. The review of the scientific and methodological approaches for the creation, compliance, functioning and possible special raw material zones, environmental audits and prospects has been done. Analysis of Ukrainian manufacturers, Poltava region in particular, which have the status of special raw material zones has been shown. Substantiates the potential to enhance environmental Poltava region has been based.

Kharytonov M. M., Stankevich S. A., Klymenko O. E., Khlopova V. M. Determination of resistance of varieties of stone fruit plants to acid rain, caused by the formation of aerosols // News of Poltava state agrarian academy. – 2014. – №4. – P. 15–19.

One MPC a steady exceeding in the level of month nitrogen dioxide average concentration in the atmosphere of industrial cities of Dnipropetrovsk region was fixed. Air NO₂ content changed from 0,03 to 0,08 mg/m³ in Krivoy Rog and from 0,05 to 0,09 mg/m³ in Dniprodzerzhinsk and Dnipropetrovsk last years. The data base with remote and ground based sensing of atmosphere pollution with acid aerosols gave possibility to establish level of artificial acid rain forming in model conditions. It was fixed in the experiments different concentrations of aerosols on activity of some components of stone fruit crops antioxidant system for relative firmness of varieties to technogenic stress, to work out the scale of relative firmness of kinds and varieties to acid rains. It was established that on firmness of varieties of acid rains the stone fruit crops can be disposed in the regression line: plum > myrobalan plum > apricot > peach. Lowest firmness has got varieties early terming of ripening (peach, apricot) in the limits of one kind. An origin took a big place then term of ripening in myrobalan plum. Sometimes the varieties of one fruit crop have distinction to acid rains then other crops. Data obtained allow to manage assortment of firm and relatively firm to air pollution with acid aerosols and acid rains for crops and varieties of Prunus L. in south of Ukraine.

Makarenko N. A., Salnikova A. V., Bondar V. I., Borsch G. M. Ecotoxicological assessment of

biofer-tilizers, fermentation products, biogas plants for their compliance with organic production // News of Poltava state agrarian academy. – 2014. – №4. – P. 20–24.

An ecotoxicological assessment of the safety of biofertilizer was conducted – the influence of the product of the processing manure in biogas plant on the soil micro- and mesofauna and agricultural plants. Having based on the results we have grounded the ecological safety rules of biofertilizers application in organic crop production. It was established that the use of studied biofertilizers affects positively the productivity of crops and if to subject to ecological safety standards of biofertilizers introduction there is no negative impact on agro-ecosystem.

Shevnikov M. Ya., Mylenko O. G., Lotysh I. I. Quality indexes of soy seed depending on influence of mineral and bacterial fertilizers // News of Poltava state agrarian academy. – 2014. – №4. – P. 25–29.

Influence of mineral nitrogen and «Rizotorfin» is reflected on an accumulation an albumen and fat in the seed of soy. The inoculation of «Rizotorfin» and bringing of mineral fertilizers, their especially compatible application, entailed the considerable increase of maintenance in the seed of albumen and diminishing of content of fat. Bacterial fertilizers positively influenced on the increase of content of fat in the seed of soy – 18,1 %, but more rational was a complex action of mineral and bacterial fertilizers that promoted content of fat in the dry substance of seed to 21,4–22,4 %.

Rozhkov A. O., Chernobay S. V. Crop productivity of spring barley variety Dokuchayevskiy 15 depending upon application of different seeding rates and foliar additional fertilizing // News of Poltava state agrarian academy. – 2014. – №4. – P. 30–34.

The results of the researches conducted during 2012–2014 on the experimental field of KhNAU named after V. V. Dokuchayev concerning the influence of application of different variants of seeding rates and crops foliar additional fertilizing with complex fertilizers and biological preparations on the variability of spring barley crops productivity variety Dokuchayevskiy 15 are given in the article. During the researches it was established the optimum seeding rate for the studied spring barley variety – 5,0 million/ha which provides the highest crops grain productivity formation. The high efficiency of complex application of Crystalon special with biopreparation «Agro EM» was defined.

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Crops grain productivity on this variant increased from 2,31 to 2,43 t/ha in comparison with the control. During the analysis the degree of connection between crops grain productivity and yield structure main elements was determined.

Batashova M. E. Biotechnological crops in modern agrarian sector // News of Poltava state agrarian academy. – 2014. – №4. – P. 35–43.

In the article the wide review of genetically modified crops with new traits are presented. On the basis of the collected data the description of main traits that attended in biotech crops is pointed: herbicide tolerance, insect resistance, viral disease resistance et al. The analysis of data shew that all new genes built-in in plants had a bacterial, plant or viral origin. The genetically modified lines of maize and soybean have been got the most distribution in the world.

Masliev S. V. The yield of sweet corn and popcorn during permanent cultivation and in crop rotations // News of Poltava state agrarian academy. – 2014. – №4. – P. 44–47.

The results of long-term field experiments of the yield of sweet corn cobs and popcorn grains of various sorts and hybrids, depending on the

precursors in field and vegetable crop rotations and also permanent sowing are shown. It is found that the best precursors for these subspecies of corn in field crop rotations are pea-oat mixture for green nutriment and winter wheat after steam, and in vegetable crop rotations the best are cucumbers, onions, tomatoes, early potatoes and zucchini, after which the yield of sweet corn cobs reaches 8,5–9,5 t/ha and popcorn grains – 2,2–2,9 t/ha.

Solonechnyy P. N. Adaptability and stability of spring barley cultivars in terms of performance // News of Poltava state agrarian academy. – 2014. – №4. – P. 48–53.

The results of ecological trials of 17 spring barley cultivars bred at the Plant Production Institute named. after V. Ya. Yuryev NAAS are presented in the article. Environment effect, genotype effect and genotype of environment interaction effect on the formation of seed weight (performance of plants) were estimated. Peculiarities of environments across ecological trial plots as backgrounds for genotype assessment were established. Cultivars with high general and specific adaptability by plant performance as valuable source material for spring barley breeding were identified.

VETERINARY MEDICINE

Kulinich S. N. Efficiency of cryolysis at sat cattle during the extraction of malignant neoplasms on eyelids // News of Poltava state agrarian academy. – 2014. – №4. – P. 54–57.

The symptomatology of malignant neoplasms of eyelids of sat cattle is found out. We tested method of cryolysis of malignant neoplasms of sat cattle's eyelids. Efficiency of the procedures in a postoperative period in the dynamics of clinical and morphological indexes of blood is defined. It is set by planimetric researches that till 15th day reduction of wounded defect of relatively initial indexes was 58,0 %. At the 20th day scars were barely noticeable and was only 11,1 % according the initial data.

Lokes P. I., Kravtchenko S. A., Lokes-Krupka T. P., Burda T. L. Morphological changes of the liver by hepatitis in dogs and cats // News of Poltava state agrarian academy. – 2014. – №4. – P. 58–61.

Research has established that during the progression of hepatitis in dogs and cats, inflammatory process occurs in two forms: the serous and hemorrhagic. Macroscopically the liver is enlarged and edematous, its edges are dulled, and capsule is tense, stagnation is observed. At sectional drawing erased. Changes in vascular pathology in

both forms are similar. Inflammatory edema is more expressed in the serous form of hepatitis in cats. In both cases there is hypertrophy and hyperplasia of Kupffer cells and granular degeneration of hepatocytes.

Yevstafieva V. O. Gavrik K. A. Improvement of the methods of intravital diagnosis sarcoptic mange, demodectic mange in dogs // News of Poltava state agrarian academy. – 2014. – №4. – P. 62–64.

The article presents the results of the determination of indicators of diagnostic efficiency of lifetime diagnostic methods akaroses of dogs, namely: sarcoptic mange, otodektoza and demodectic mange. We compared methods of Priselkova and Alfimova and an improved our way. It is found that the proposed improved method for the diagnosis of sarcoptic otodektoza and demodectic mange of dogs has a high diagnostic efficiency (5–40 %) than well-known methods, and does not require time consuming and provides a high degree of bleaching crusts and clarity of the obtained material.

ECONOMICS

Pysarenko V. V., Liakh Y. Y. The essence of agriculture enterprises' marketing risks // News of Poltava state agrarian academy. – 2014. – №4. – P. 65–70.

The article presents defining and consideration of essence agriculture enterprises' marketing risks. We have studied sources of marketing risks in agrarian enterprises in the Ukrainian contemporary environment. Authors have offered the classification of marketing risks of agriculture enterprises. It is useful for edification and analys of marketing risks during their management; in addition it's useful for adequate accepting risks by an enterprise, minimizing their negative implications, wide overegging areas of their arising.

Dorogan'-Pisarenko L. O. Anti-crisis monitoring of the financial condition of agrarian enterprises // News of Poltava state agrarian academy. – 2014. – №4. – P. 71–74.

Existing approaches for assessing the financial performance of agricultural enterprises has been reviewed. The features of the implementation of anti-crisis monitoring in modern conditions have been defined. Existing anti-crisis strategy of monitoring the current condition of the efficiency of agricultural production have been characterized. The

need to improve the methodological approaches to the assessment of the financial situation of agricultural enterprises and the need to implement measures for improvement of business entities with signs of the crisis have been noted.

Demchuk N. I. Strategic planning of investment activities of food enterprises // News of Poltava state agrarian academy. – 2014. – №4. – P. 75–78.

It has been determined that the investment activities and its strategic planning must take a leading place in the socio-economic activities and the development of food enterprises in general terms by the action of uncertainties and cyclical financial crises. This is needed to find sources of investment finance companies to maintain or improve their competitiveness, investment restructuring provision as a factor of improving the efficiency, modernization and development of new product samples as a response to the demands and challenges of the external and internal environment of the food market. Investment activity is the key for solving environmental problems and socio-economic problems that accompany the development of the food industry. Investments are needed to improve the quality of products, its standardization and certification.

TECHNICAL SCIENCES

Goryk O. V., Kovalchuk S. B., Yakhin S. V. Analytical and experimental determination of carrying capacity of the carcass elements of stadium «Vorskla» named after Alexey Butovsky (Poltava) // News of Poltava state agrarian academy. – 2014. – №4. – P. 79–86.

Results of modeling of a spatial work of elements of engineering designs taking into account available restrictions of deformation of crossbars on the basis of natural examination and test of separate inclined crossbars of the frames of a tribune construction of stadium (East tribune) are presented. Modeling has given the chance to establish real conditions of their work and to define an operational resource. Researches are based on use of ratios of iterative shift model of a bend of composite bars in the conditions of limited deformation. As a result of the carried-out mathematical modeling level of margin of safety of inclined crossbars within standard useful loading that has allowed drawing the conclusion about possibility of reliable operation by a construction tribune has been defined.

Kalinichenko A. V. Tytko R., Sakalo V. M., Gorb O. A. Usage of the mathematical modeling

for optimization solar system's operation // News of Poltava state agrarian academy. – 2014. – №4. – P. 87–94.

We analyze the possibility of usage of the methods of mathematical modeling in the creation, analysis and implementation of solar systems on the basis of data obtained in the laboratory of renewable energy has been promoted. As a result of investigations have revealed features of influence factors solar system on the thermal efficiency heat exchanger. Studies of the effectiveness solar vacuum collector and the simulation results shew the feasibility of usage of this equipment.

Prasolov E. Ya., Lapenko T. G., Bondarenko O. Yu. Improvement of firmness of details against wear of engines of agricultural technics // News of Poltava state agrarian academy. – 2014. – №4. – P. 95–101.

The need to cover details of agricultural machinery by inorganic non-metallic phosphate film was justified. Technological process conditions of preparation of the initial materials and the composition of the working solution at a particular temperature were selected and justified. According to the research dependence of temperature of the

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working solution concentration, the linear speed at the control points from the value of the wear surfaces of the samples have been established. Recommendations for the implementation of technology in the application of anti-friction coating production have been offered. The technological process of applying conversion coatings to their saturation with nanomaterials tested for manufacturing parts friction engines and agricultural machinery has sufficient commercial appeal.

Ivashchenko T. G., Pushkaryova I. D. Determination of contaminants in soils of industrial enterprises' territories and authentication of their ecological danger // News of Poltava state agrarian

academy. – 2014. – №4. – P. 102–105.

This article presents the results of qualitative and quantitative analysis of soil pollutants of the industrial enterprises, which stopped their activities, such as Saki State Chemical Plant. It was found that in samples of soil there are at least 26 pollutants, 5 of which belong to the first class of substances hazard. Concentration of pollutants were investigated and found that in some samples they exceed the maximum permissible concentration in 2–295 times. The article sheds light on environmental hazard factors of specific pollutants, in particular their impact on the human organism.

THE YOUNG SCIENTIST'S PAGE

Shovkova O. V. Production status of soybeans in Ukraine and in the Poltava region // News of Poltava state agrarian academy. – 2014. – №4. – P. 106–110.

Soy is one of the main strategic cultures of world agriculture. Year by year the interest of this protein and oilseed crop grows in Ukraine. This article explores the state of soybean production in our country and in the Poltava region. Based on materials from the State Statistics Service the article shows the dynamics of soybean production in Ukraine (2000–2013). According to the Department of State Agricultural Development of the Poltava Region the sowing of soybean in Poltava region in the last ten years has been analyzed and shown the concentration of the production of this crop in the agricultural enterprises of our region.

Povkh O. V. Formation of carrot biological productivity indicators under the influence of the organic fermented fertilizer and the microbiological preparation // News of Poltava state agrarian academy. – 2014. – №4. – P. 111–114.

The effect of the fermented organic fertilizer and the microbiological preparation on the yield capacity level of carrot and the quality of the obtained product was investigated. It was found that significant crop yield increases (on 26,0–38,4 %) when the fermented fertilizer is applied (11 t/ha) or in cases of its integrated usage (5,5 t/ha) together with the microbiological preparation, as well as soil treatment using the preparation with previously applied mineral fertilizers (N_{30}). When the fertilization systems under consideration are used, quality indicators of the root crop are significantly improved – there is an increase of carotene content and nitrate level does not exceed the maximum allowable concentrations.

Frolov D. O. Economic problems of pheasant

breeding in Ukraine // News of Poltava state agrarian academy. – 2014. – №4. – P. 115–118.

Economic efficiency of the farm depends on maintaining the technology of birds breeding. During the optimization process of the pheasant breeding in the farm «Skiff» for 3 years we managed to increase the number of chicks from one female to 185 %. In the case of maintenance of the pheasant breeding technology in all farms of Ukraine, the number of young chickens increases by 113103. In the recalculation to the cash equivalent, the economic effect for Ukraine as a whole will be more than 13,3 million UAH.

Semirenko V. V. Healthy extremities are the basis of high productivity of pigs // News of Poltava state agrarian academy. – 2014. – №4. – P. 119–122.

The article presents the importance of the functional state of limbs of pigs. It describes in detail about the diagnostic study of hoofs and the impact of lameness' risk factors. It should be noted that infringement of musculoskeletal system's function of pigs substantially affects their productivity. The article gives valuable information about the diagnostic features of hoofs in pigs. The main idea of authors is to conduct correct diagnosis and prevent disease of the functional state of limbs and hoofs. The article is useful for doctors of veterinary medicine, researches in further investigations in a pig breeding.

Kanivets N. S. Spread of the tongue ulcer of cattle in farms of the central region of Ukraine // News of Poltava state agrarian academy. – 2014. – №4. – P. 123–125.

We examined the questions of spread of tongue ulcer of cattle in farms of central region of Ukraine. In the result of examination of foods of slaughter we found out, that in the separate farm of Poltava re-

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gion on the average 32,6 animals had tongue ulcer. In Kotelva, Reshetylivka, Tchernuchy and Shyshaky districts of Poltava region the tongue ulcer is registered from 15 to 37 % of animals. In Sumy, Cherkasy and Kharkov region – 17–42 %. Received data shows so wide spread of tongue ulcer of cattle in investigated region.

Palij L. N. Distinctive symptoms of domestic cats' perianal adenitis in the condition of the veterinary center «RED CAT» // News of Poltava state agrarian academy. – 2014. – №4. – P. – 2014. – №4. – P. 126–128.

The article presents the results of clinical investigation of cats in the veterinary center «RED CAT» to diagnose perianal adenitis. Sex, breed, and age-related predisposition to this disease are clarified. On the basis of the collected anamnesis, clinical examination and functional diagnostics defined pathological changes that accompany this disease. In particular we defined the tensile of glands, inflammation, narrowing of the excretory ducts, and change of the inflammatory exudate color.

Yurchenko I. I. The distribution of purulent-inflammatory processes of the distal part of cows' extremities // News of Poltava state agrarian academy. – 2014. – №4. – P. 129–132.

The results of monitoring studies of the purulent-

inflammatory processes' distribution of the distal part of cows' extremities are presented in the article. Research has been conducted on the base of dairy farms of Poltava region in 2011–2013. We proved that with free cow content, the finger papillomatosis dermatitis has the largest share in the structure of pathology (56,5 %), while tethered content the superficial suppurative disease was the most common (62,8 %). This data obtained show a significant spread of finger pathology and the harm that they give for the farms because of low productivity.

Volovik D. V. Development of management system by resource potential of agrarian enterprises // News of Poltava state agrarian academy. – 2014. – №4. – P. 133–136.

It has been determined that the effective management of the resource potential of agrarian enterprises should be a flexible system that will adapt to the market conditions and to ensure the overall development of the company. We analyzed the resource potential of the agrarian enterprise and offered the main directions of forming a system of efficient management of resource potential, for the development and implementation of which we have to achieve a high level of information and analytical support of management, which is essential for the development of the agrarian sector.

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