

AGRICULTURE. PLANT CULTIVATION

Popov S. I., Tschmeistruk N. G., Man'ko E. N., Usov A. S. Usage of major nutrients by modern varieties of spring durum wheat in dependence on predecessor and nutrient background // *News of Poltava State Agrarian Academy*. – 2015. – №4. – P. 6–9.

The article highlights two-years' (2013–2014) experimental data on varietal characteristics of the major nutrients consumption as affected by various predecessors and mineral nutrient background in conditions of Ukrainian Eastern Forest-Steppe. It was found that variety Novatsiya uptakes the most nutrients for the formation of 1 t of grain. Against the background without fertilizers it uptakes 28 kg of nitrogen, 10 kg of phosphorus and 14 kg of potassium, while against the background of 30 t/ha manure along with application of $N_{60}P_{60}K_{60}$ – 36 kg of nitrogen, 14 kg of phosphorus and 15 kg of potassium.

Masliyev S. V. Influence of biological product on growth, development and productivity of sweet corn // *News of Poltava State Agrarian Academy*. – 2015. – №4. – P. 10–13.

The results of the field researches of influencing of seed's inoculation by biological product on growth, development and productivity of hybrids of valuable vegetable culture – sweet corn are presented. Possibility of increase of the productivity and quality of products is set due to treatment of seed by microbial preparations «Diasofit», «KL-9», «Phosphoenterine» + «Diasofit». Data of the consumption of mineral matters and water consumption are given. Recommendation of norms of application of biological product is given. The productivity of grain of sweet corn is shown. The analysis of dynamics of rejection depending on application of preparations is done.

Shevnikov M. Ya., Lotysh I. I., Galich E. P. Features of development of soy in dependence on terms of sowing in the conditions of Left-Bank Forest-Steppe zone of Ukraine // *News of Poltava State Agrarian Academy*. – 2015. – №4. – P. 14–17.

Friendliness of shoots, density of plants, ripening evenness, size and quality of harvest depends on the term of sowing of soy. A basic criterion of choice of term of sowing is the persistent warming up of sowing layer of soil. A minimum temperature for the shoots of soy is about +10 °C on condition of subsequent increase of temperature of soil. Warming up of sowing layer to +12–14 °C provides the friendly germination of seed at presence of moisture. The optimal term of sowing for soy is the first half of May. On such conditions for the receipt

of normal shoots it is possible to count on the maximal productivity. Early or late lines of sowing reduces the productivity of seed of soy on 12–14 %.

Bogolyubov V. M. The system of sustainable development as a theoretical basis for training of the future ecologists // *News of Poltava State Agrarian Academy*. – 2015. – №4. – P. 18–21.

The article analyzes the main principles of sustainable development in the context of future environmentalists. In order to form professional competence of Master ecologist attention is focused on implementing a meaningful learning process competencies. These competencies are based on competency-active approach and taking into account the requirements of industry standards. For each discipline program for professional training we highlighted key and professional competence in the context of solving the problems of transition to sustainable development and the principles of well-adjusted use of natural resources.

Tanchik S. P., Mihlovets O. P. Optimization of control of crops' weed-infested of soybean farming with different systems in Right-Bank Forest-Steppe zone of Ukraine // *News of Poltava State Agrarian Academy*. – 2015. – №4. – P. 22–28.

The main results of research on the impact of soil and insurance herbicides on weediness of crops for cultivation of soybean under different farming systems (industrial and No-till) are presented. It was established that the greatest efficiency of soil and insurance herbicides and the lowest level of contamination was marked in the application of tank mixes before sprouting and during the growing season and crops, which influences the crop soybeans. Pre-sowing weed synusia is effectively destroyed by total herbicides continuous action system of No-till.

Poltorets'kiy S. P., Poltorets'ka N. M. The dependence of yield and quality indicators of seeds of millet, depending on the time and method of sowing // *News of Poltava State Agrarian Academy*. – 2015. – №4. – P. 29–31.

The result of researches with the application of method of correlation pleiads of the influence of different terms and methods of sowing on sowing qualities and crop capacity of the seeds of broomcorn millet under conditions of unsustainable moisturizing of the southern part of Right-Bank Forest-Steppe zone were analyzed.

Bagan A. V. Forming of the productivity and quality of grain of corn hybrid depending on predecessor // *News of Poltava State Agrarian Academy*. – 2015. – №4. – P. 32–35.

The elements of the productivity, level of the

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productivity and indexes of quality of grain of corn hybrids of LTD «Monsanto» depending on a predecessor in the production terms of Poltava area are researched. Influence of winter wheat and pea on forming of head mass, grain mass from a stalk, productivity index, 1000 grains mass and albumen maintenance at the researched hybrids is studied. The best predecessor was selected. It is a pea. The best hybrids of corn (after economic-valuable signs) are made to order for growing.

Barat Yu. M. The productivity of winter wheat in dependence on maintenance of elements of feed in soil // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 36–39.

The results of researches on the study of influencing of maintenance of elements of feed in soil on forming of the productivity of winter wheat are presented. It is set that the promoted maintenance of alkaline-hydrolysed nitrogen and exchange potassium in soil was instrumental in forming of the greater productivity of grain of crop of winter wheat. We did cards of feeds' elements on

which it is represented how this element is widespread on the field and in what amount. It enables to do the planned bringing of fertilizers on these coordinates. A norm will constantly change as well as we will plan it.

Fesenko O. G., Koval' V. V., Kucheriavyi S. O. Ecological state of water objects of Poltava region // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 40–43.

The results of research on content of pesticides, heavy metals and nitrates in superficial and underground waters of Poltava region are presented. Researches were conducted in 2013–2014 on the base of Poltava branch of public institution «Institute of guard of soils of Ukraine». It is certain that the wide use of facilities of plants' defence in agriculture can be a reason of contamination of environment by them, in particular water objects. We got results that testify the significant piling up of nitrates, heavy metals and absence of remaining amounts of pesticides.

AGRICULTURE. ANIMAL HUSBANDRY

Lomako D. V. Technology of incubation of goose eggs in the conditions of the Myrgorod private leasing agricultural poultry incubatory-farming enterprise // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 44–46.

The analysis of influencing of different temperature conditions of incubation of goose eggs is conducted on hatchability and quality of day's youth in the conditions of the Myrgorod poultry incubatory-farming enterprise. It is set that incubation of goose eggs of large size with application of traditional temperature condition of incubation results the decline of their hatchability and qualities of goslings. In this connection there is

a necessity to revise the use of the traditional, stable modes of incubation of goose eggs, especially it touches pedigree economies, such as mentioned. As large sized eggs at the differentiated mode of incubation bigger goslings hatched which better grow and develop and they can be used for repair of herd, as a rule.

Thus, in our opinion, it will be contributed in selection work which directed on the increase of meat qualities for the geese of large grey breed. On the whole application of the differentiated temperature condition of incubation enables to promote hatchability of goose eggs on 5–6 percents, and also promotes quality of got day's youth.

VETERINARY MEDICINE

Kolych N. B., Skrypka M. V. To the features of lymphatic channel of digestive tube of small cattle // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 47–50.

From the mucous membrane of the different parts of oral cavity the outflow of lymph is carried out by superficial and deep lymphatic vessels to regional lymph nodes. The mucous and muscular membranes of proventriculus have well developed lymphatic channel, consisting of meandering capillaries with blind outgrowths. The lymphatic capillaries with flask-shaped protrusions are located in serosa. The capillaries, interconnecting with each other, form a capillary network. In 70 % of cases the

outflow of lymph from the omasum regional lymph nodes is completed in pancreatic lymph node.

Lokes P. I., Kravchenko S. A. Ultrasonography of spleen in dogs // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 51–54.

The work presents the results of ultrasonographic researches of features of normal spleen and of its pathological conditions in dogs. We described a method of ultrasound of the spleen in animals of this species and described changes of visualization of the organ. These ultrasonographic characteristics of the spleen with the splenomegaly, hemorrhages in the parenchyma and with breaking the capsule and neoplasia. We established that in healthy animals spleen has the form of tapes or crescent with sharp

edges and homogenous parenchyma.

Kyrychko B. P., Zvenygorods'ka T. V., Semirenko V. V. Clinical and radiological characteristics of inflammatory purulent processes of the pigs' distal limb // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 55–57.

In the article research highlights the clinical and radiological peculiarities of purulent inflammatory processes in the distal pigs' extremities to improve the diagnostic and differential diagnostic base. Thanks to general and special methods of clinical research we found signs of generalized suppurative osteomyelitis, arthritis, cellulitis, pairarticular phlegmon with lesions of hoof and coronary bone, as well as relevant joints.

Yus'kiv I. D., Melnychuk V. V. Efficiency of different test-cultures of helminth's eggs for establishing of desinvasive properties of chemicals // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 58–60.

The comparative efficiency of the usage of test-cultures eggs of *Ascaris suum* and *Trichuris suis*, isolated from different substrates (gonads of female worms and faeces of sick pigs) in the process of identifying of desinvasive properties of chemicals «Bi-des» and «Brovades-plus». We found that the most resistant to the studied chemicals were *T. suis* test-culture' eggs obtained from faeces of sick pigs. In particular, desinvasive chemicals in 2 % concentration and 60 min exposure led the death of 68,75–71,85 % of *Trichuris suis* eggs, isolated from the faeces of sick pigs and 82,60–89,13 % – isolated from the gonads of female worms. However, desinvasive chemicals 100 % were detrimental to the successive stages of *Ascaris suum* eggs.

Shcherbakova N. S., Peredera Zh. A., Peredera S. B. Determination of quality of chicken eggs that were produced in «Poltava poultry farm» // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 61–63.

In the article we gave data, that show the indexes of quality and safety of chicken eggs that were produced by Privately Joint Stock Society «Poltava poultry farm». Eggs are investigated on content of toxic elements of such as: lead, cadmium, mercury, copper, zinc, arsenic, and also antibiotics. We determined a content of fat in yolk and carotenoids. Organoleptic studies and egg tester are undertaken. It is set that chicken eggs that came from PJSS «Poltava poultry farm» on the indexes of quality accord the indexes of operating normative documents.

Gavrylenko O. S., Homits'ka O. A., Zagorul'ko O. V. Determination of microbiological risks at research of pigs' meat, infested by sarcocystis // News of Poltava State Agrarian Academy. – 2015. – №4. –

P. 64–67.

In the article the approaches to the microbiological risk assessment of pork, that was obtained from animals infected by sarcocystis were described. The analysis of microbiological hazards of pigs' meat infected by sarcocystis, included quantitative and qualitative information of microbiological hazards in materials research. We found that in samples with different degree of defeat by sarcocystis not only the number of mesophilic aerobic and facultative anaerobic microorganisms (MAFAM) in meat increases, but the number of pathogenic and conditional-pathogenic microorganisms.

Kanivets N. S. Distribution of ulcerative glossitis of cattle in selected farms in Poltava region // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 68–69.

According to the results of the research in some farms in Poltava district Poltava region we found that ulcerative glossitis spread among cows ranged from 0 to 57,9 % in cows, and from 0 to 57,2 % – in calves, which shows that the cows sick more often than calves. The findings and analysis of the literature show widespread ulcerative glossitis of cattle both in Ukraine and abroad.

Maslak Yu. V., Sobakar A. V. Usage of protein-vitamine additions for small animals // News of Poltava State Agrarian Academy. – 2015. – № 4. – P. 70–72.

The resulted review of literature information on application in a stock-raising protein-vitamine additions is presented in the article. Composition of drug «Biostim-40» is considered for dogs, that due to content only of natural constituents (protein, irreplaceable acid, methionine and ascorbic acid), has positive influence on the dogs' organism. «Biostim-40» is original development of Technological Institute of Milk and Meat of the Ukrainian Academy of Agrarian Sciences. It is established, that in literary sources there is not enough information about application and influence of protein-vitamine additions on the dogs' organism, in particular drug «Biostim-40».

Grushans'ka N. G. Determination of clinical state among cows with an application of information technology // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 73–75.

The questions of complex diagnostics of techniques development of clinical state among cattle are shown in the article. The typical telemetry system consists of: a circuit set of sensors – modulator – frequency generator – transmitter antenna – antenna of receiver – receiver – demodulator – final signal converter – PC. The testing of system of respiratory rate and rumination of cattle in a farm

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was developed, conducted and identified by us. We investigated the location of points on the surface of animal's body, on which sensors with our development in comparison with the classical methods are attached.

Gavrylenko O. S. Substantiation of expediency of the specific prevention of infectious bronchitis of hens // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 76–80.

In the publication we presented data on the

specific prevention of infectious bronchitis of hens, that is based on the use of specific drugs (vaccines), as well as the fulfilling common sanitary and veterinary measures. It was determined the period of conservation transovarial antibodies in blood serum of chicks-broilers and the optimal time for chicks' vaccination, as well as we compared the effectiveness of the vaccine, made from different strains of infectious bronchitis virus of chickens.

ECONOMICS

Kompaniets' V. A., Solodushko M. M., Kulyk A. A. Economic efficiency of cultivation of modern varieties of winter wheat in the conditions of Northern Steppe of Ukraine // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 81–85.

The economic estimation of experimental research results to define the productivity and cultivation peculiarities of modern varieties of soft winter wheat of domestic and foreign selection is carried

out. The investigations were conducted on the basis of Sinelnikovo SES of Institute of Agriculture of the Steppe Zone of NAAS. The varieties characterized by high productivity and resistance to the unfavorable impact of biotic and abiotic environmental factors are defined. The recommendations to increase the economic efficiency of winter wheat grain production based on the competitive varieties with high yield and adaptive potential are formulated.

TECHNICAL SCIENCES

Levi L. I. Modeling dependencies «multidimensional input–output» for automation of control processes under uncertainty // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 86–90.

In work considered technology allows to build multivariate dependence with continuous output by combining the advantages of soft computing and regression analysis, given the opportunity, the definition of importance of input variables and their necessary interactions. However, when modeling objects with continuous output when a sufficient accuracy of the determination of a precise value of the output value is necessary, the identification of the parameters of fuzzy regression equations using the least squares method and parameters of membership functions by statistical processing of expert information is not sufficient to provide the desired accuracy. It requires configuration on the training set of a fuzzy regression model in

accordance with the testing sample.

Ivanov O. N., Arendarenko V. N., Tshedgo Wako Gi Patrice. Definitions of cooling capacity of Peltier thermoelectric modules based on multifactor experiment // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 91–94.

The technique of determining the cooling capacity of Peltier thermoelectric module that converts the energy of the electrical current to thermal flows with different direction vectors was presented. Studies were conducted using the methodology of planning and carrying out multivariate experiments. On the basis of experimental and analytical calculations we derived approximation equation of the second kind that allows you to determine the value of cooling capacity thermoelectric module in a wide range of changes of two determining factors: the magnitude of the current and temperature of the heat-releasing side of the module.

THE YOUNG SCIENTIST'S PAGE

Goncharov S. L., Soroka N. M. Distribution metacercariae *Paracoenogonimus ovatus* (Trematoda, Cyathocylidae) in the muscle tissue of freshwater fish // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 95–98.

The distribution of metacercariae of trematodes *Paracoenogonimus ovatus* (Katsurada, 1914) in the muscle tissue of the population of freshwater fish, such as: roach (*Rutilus rutilus*), silver bream (*Blicca bjoerkna*), bream (*Abramis brama*), crucian (*Carassius gibelio*), rudd (*Scardinius erythrophthalmus*), pike

(*Esox lucius*), pikeperch (*Sander lucioperca*). It is shown that the maximum number of metacercariae *P. ovatus* was localized in the dorsal muscles, namely near the dorsal fin and amounted to 41,3 % of the total number of identified parasites. The minimum number of indicators fluke metacercariae is observed in the anal fin – 2,1 %

Orlov O. V. Minimization of credit risks in the rural credit union with the use of scoring systems // News of Poltava State Agrarian Academy. – 2015. – №4. – P. 99–102.

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The article deals with the problem of credit risk in the rural credit unions and we offer an effective system of risk assessment using the scoring system. Theoretical sources of scoring as the scientific method are adduced. Specific offers for the development and application of scoring in the rural credit unions are given. We emphasize the importance and the need to use this method in practical activities of these organizations, the feasibility of developing of a single model of an automated credit scoring system in order to minimization of credit risk in the rural credit unions.

Velychko E. I. Economic efficiency of milk production in agricultural enterprises // News of Poltava State Agrarian Academy. – 2015. – №4. –

P. 103–108.

Economic efficiency of milk production is considered in agricultural enterprises. We investigated economic efficiency of milk production on the example of «Agricultural Firm named after T. G. Shevchenko» Vovchansk district of Kharkiv region. The basic statistical indexes of effectiveness of activity of the probed economy were used for this purpose. As a result of study and generalizations of experimental data of research are grounded that «Agricultural Firm named after T. G. Shevchenko» is an effective agricultural enterprise. The basic ways of increase of profitability of suckling stock-raising of enterprise are certain.

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