

AGRICULTURE. PLANT CULTIVATION

**Zhukov O. V., Shatalin D. B.** The value of ecological and morphological features of the rain worms (Lumbricidae) of Steppe Dnieper and the influence of environmental factors in the organization of groups of natural, agricultural and urbanized ecosystems // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 6–19.

The paper offers a matrix of environmental and ecological-morphological features of earthworms. It is shown that this matrix has information that could explain the organization and functional structure of the community of earthworms of natural, agricultural and urbanized ecosystems. Humidity conditions, which are expressed by quantitative characteristics of gignotop of the edaphotop are the determining factor that affects the organization of communities of earthworms, which, in its turn, is also reflected in the ecological and morphological features of lumbricid communities. Trophotopes has a multi-vector impact on the organization of communities of earthworms. Features of this influence are also modulated ceonotic features of the biocenoses. It showed that character of communications of humidity conditions and trophic edaphotop with the organization of communities of earthworms, which also is reflected in the morpho-ecological features of certain types of earthworms. Proofs of existence of earthworms ecomorphes – gignomorphes and trophocenomorphes have been presented.

**Tanchyk S. P., Mykolenko Ya.** Efficiency of control of weeds in corn sowing at different systems of basic till of soil in Right-Bank Forest-Steppe of Ukraine // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 20–23.

We investigated influence of ploughing with gimbleting (ploughing), superficial, ploughing (without gimbleting) and «zero» tills of soil on a weediness groupment and productivity of corn for grain in Right-Bank Forest-Steppe of Ukraine. We fixed the best contamination of efficiency of ploughing without gimbleting till of soil, the lowest – at a zero till. The end of the growing season there was active growth weed component due to favourable terms (humidity, warmly), that substantially influenced on an amount and mass of weeds in sowing. The greatest productivity on the average value is fixed at ploughing without gimbleting till and it was 9,7 t/ga, the minimum is fixed at superficial till of soil and it was 8,8 t/ga.

**Garbar L. A., Antal T. V., Romanov S. M.** Characteristics of formation of spring rape productivity under the influence of seeding rate and

fertilizing // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 24–26.

The article provides the results of the research aimed to study the effect of the use of fertilizers and seeding rates on formation of productivity of crops of different varieties of spring rape. Research was conducted during 2013–2015 in terms of Cherkasy region in typical black soil. As a result of the studies it was found that in the typical low-humic black soil in Forest-Steppe zone of Ukraine the highest increase in yield of spring rapeseed varieties Magnat and Sirius is formed by fertilization in norm of  $N_{70}P_{40}K_{70}$  and seeding rate of 1,2 million of sprout seeds per 1 ha.

**Kotchenko M. V., Kyrsanova G. V., Puhach A. M., Puhach A. V.** Productivity of maize hybrids of different maturity under conditions of the northern Steppe of Ukraine // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 27–30.

We established that the highest productivity indexes (the leaf area, number of cobs per 100 plants, grain weight of one cob, weight of 1000 grains) form hybrid crops NC Lemoro. Agroclimatic potential of Steppe zone of Ukraine is in the best biological characteristics of this group of hybrids ripeness, ensuring the formation of grain yield at 8,67 tones/ha.

**Gavrylenko O. S., Homits'ka O. A., Zagorul'ko O. V.** Assessment of microbiological processes while storage of grain spring wheat // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 31–35.

The influence of preparation complex with composite microelement origin of the bacteria and fungi cultures, isolated from grains of spring wheat of State Enterprise Novotroitsk elevator in Kyiv region during storage was studied. We established fungicidal effectiveness of the drug, which consists of silver and copper minerals in the form of organic salts of carboxylic acids obtained through nanotechnology. The results of studies of specific pathogens of grain of winter wheat are presented.

**Antal T. V., Garbar L. A., Maleonchuk O. V., Korpan A. S., Tret'yak D. A.** Field germination and productivity of hard and soft spring wheat at application of mineral fertilizers in Forest-Steppe of Ukraine // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 36–39.

The results of researches of influencing of mineral fertilizers under hard and soft wheat on the field germination and productivity for growing in the Forest-Steppe of Ukraine are presented in the article. We found that in the Forest-Steppe of Ukraine on deep black soil with a low humus

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content and black ash soil the field germination of plants depends on weather terms, predecessor and system of fertilizer. We proved that in variants with bringing of phosphoric and potassium fertilizers the field germination of seed was on 4–5 % more high comparatively with variants without fertilizers. The germination of spring wheat seed goes down on the average on 0,4–1,2 % with the increase of norm of sowing of seed from 3,0 to 7,0 million units per hectare.

**Syplyva N. A., Gnenna M. A., Kolyadenko S. S., Pavlenko O. W.** Decorative herbaceous plants in Ukraine (place of cultivation, structure, ornamental) // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 40–44.

We analyzed quantitative and qualitative composition of the decorative herbaceous plants listed in the State Register of plant varieties which are suitable for dissemination in Ukraine. We reviewed and generalized the results of the cultivation of decorative herbaceous plants of Botanical gardens of Ukraine. Taxonomic, geographical analyses of decorative herbaceous plants are conducted and the rate of assessment of their decorativeness is determined. The varieties of decorative herbaceous plants, which belong to the group of plants with high ornamental are described.

**Gonchar L. M.** Action of colloidal solution of copper and zinc on seed germination of oats // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 45–48.

The article shows results of impact colloidal solution of various concentrations of zinc, copper and their complex on laboratory germination of oats' seeds. We established that effect of copper in concentration 1:1 is phytotoxic for germination of oats' seeds. We noted, that copper concentration 1:1 had reduced seed germination for 3–14 %, which has a negative impact on subsequent processes of oats growth. Concentration of copper 1:10 was affecting on germination of seeds at the same level as control variant, so it is not evident phytotoxicity of copper in that solution concentration. So it has the question about reasonableness of using that concentration of solution. We established, that with copper concentration 1:100 seeds germination of all surveyed crops was increased, what allow argue about the effectiveness of solution at this concentration. Germination of oats' seeds was reduced with zinc concentrations 1:1 and 1:10, only with concentration 1:100 we observed growing of percent similar seeds.

**Slavgorods'ka Yu. V.** Organic production in Ukraine: state and prospects // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 49–54.

The article reviews the current state of organic products in Ukraine. We analyzed the distribution of organic operators for areas of the country. As a result, we considered prospects of development of organic production and feasibility of increasing its scope for increasing demand. We discovered constraints of the development in production of organic products. The measures of stimulation of production of organic products are offered.

**Ermakova L. M., Prorochenko T. I.** Time periods of interfacial period of spring rape depending on intensification elements of growing in conditions of the Right-Bank Forest-Steppe of Ukraine // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 55–59.

We display effect of intensification elements of the cultivation on the length of the passage of spring rape interfacial periods in conditions of Right-Bank Forest-Steppe. It is noted that examined factors promoted different contribution of the passage phases of growth and development of plants rape in the experiment. According to the results of the study we found that if we put nitrogen fertilizer the growing period has increased in all versions, however, it was dependent on the type of fertilizer. In turn, the length of the growing season studied varieties and hybrids of spring rape was influenced by weather conditions and years of research. We found that optimization of state of nutrition by putting different types of nitrogen fertilizer (ammonium nitrate, ammonium sulfate, urea) provides a full realization of the potential of productivity of plants.

**Ermakova L. M., Svystunov J. V.** Formation of a crop and quality of grain of corn depending on fertilizer in the Left-Bank Steppe // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 60–62.

The results of research about the effect of foliar feeding crops fertilizer «Vitazim» on performance of maize hybrids on typical black soil are presented. The studies were conducted during 2015–2016 years in terms of «PFP-AGRO» in Pyryatyn district of Poltava region. On the basis of the processing results of research we found that for the realization of the potential productivity of maize and produce yield at 10,0 t/ha «Vitazim» is advisable to apply fertilizer application rate of 1 l/ha in the phase of 7–9 leaves on the background of the estimated norm of fertilizers and introduce in the production of high-yielding maize hybrids Okksizhen and Aleksandra.

**Ermakova L. M., Kreстьяninov E. V.** Maize yields in reliance on fertilizers and hybrids on dark gray ash soils // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 63–65.

The results of studies of the influence of foliar

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feeding crops of corn water-soluble fertilizer «Nutrimix», «Nutribor» and «Micro-Mineralis» on background calculation rules  $N_{158}P_{52}K_{52}$  complete mineral fertilizer (background) on the yield and quality of corn grain are presented. It was found that the use of foliar feeding on the background of the main fertilizer has a positive effect on the performance of the studied maize hybrids. Based on the analysis of the research results revealed that optimizing nutrition contributes to more complete disclosure of the resource potential of plants and higher yields.

**Mykolayko V. P.** The peculiarities of growth of *Cichorium intybus* seed plants depending on mineral nutrition // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 66–71.

The results of studies of the influence of mineral

nutrition on roots establishment, plant density in a phase of full growth, plant height and number of shoots have been highlighted. It was stressed that the use of complex of agricultural measures provided high root establishment, which ranged from 89,4 to 93,8 %. The high root establishment ensured optimal seed density, which is close to the planned one. It was found that the increase of *Cichorium intybus* height depended both on mineral fertilizers, schemes of its planting, and on the drip irrigation. It was mentioned that the use of fertilizers, especially nitrogenous and potassium  $N_{45}K_{70}$  has provided the largest increase in plant height and formation of shoots of first and second order as in control – without irrigation, as well as in drip irrigation.

### AGRICULTURE. ANIMAL BREEDING

**Voitenko S. L.** The ability to increase milk production in cows of local breeds // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 72–75.

The article highlights the results of studies on the impact of factors on milk production of cows of Ukrainian whitehead breed, which belongs to a local dairy breeds productivity and kept in only one breeding sector. Formation of milk production of cows of the breed consistent with animal origin and serial number of lactation. Lines Marta 171 and Ozona 417 respectively 4483,1 and 4254,9 kg of milk for signs of variation in terms of lines within 3976,4–4483,1 kg are characterized by the highest yields for the first 305 days of lactation cows. It was found that the yield of the plant herd of cows is increased to 5–6 lactation, allowing to increase the duration of the economic use of more productive cows while maintaining the genetic trait variability. On the possibility of increasing the milk yield of cows breeding methods indicates the coefficient of variation of milk yield of cows of studied lines, except Zharguna 157. Consequently, the increase of milk productivity of cows of the Ukrainian whitehead breed, you can implement the methods of inbreeding selection, keeping the gene pool of the local national population of cattle.

**Paliy A. P.** Establishing the influence of milking systems on cows during milking // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 76–78.

In-depth knowledge of the laws of basic physiological functions of the body of lactating cows is a highly powerful tool to stimulate milk

production and, thus, to increase the use of the genetic potential of animals. Adequate and effective milking of cows of high performance is to use the most appropriate physiological reactions, underlying the formation of milk and milk-giving. In designing and evaluating of the system gentle milking of cows need to consider the impact on the teats of the udder cows are not only characteristics such as milk yield of dairy cattle, the contents of somatic cells in milk, milk flow dynamics, peak milk flow rate and milking time, but also pay attention to the state of the teats of the udder with taking into account their relationship with the other characters. Prompt identification and elimination of the factors, that negatively affect the organism of animals during milking, is a prerequisite to ensure effective use of dairy cattle.

**Floka L. V.** The influence of the feeding level of white-red belted pigs on the interior indicators // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 79–82.

The influence of feeding white-red belted pigs on interior performance. An important step in pig breeding is to identify and develop criteria for predicting the performance of the animal at an early age for the interior design features. It speeds up the process of evaluating breeding value of animals and improving breeding work in the herd. Using interior performance of animals in breeding work with the herd indicates that today's pork industry makes increasing demands for higher genetic and biological quality in the pigs and their adaptability to conditions and feeding.

### AGRICULTURE. ECOLOGY

**Pysarenko P. V., Garmash O. I.** Ethnographic peculiarities of Ukrainian people and their role in

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creating ecovillages in Ukraine // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 83–88.

The article deals with ethnographic peculiarities of Ukrainian people as descendants of Trypillian culture farmers. We analyzed the main achievements of Ukrainian farmers of nineteenth century as representatives of agriculture, which has not undergone the harmful effects of scientific and

technological revolution. We gave the information about «Springs Valley» as one of the largest ecovillages of Ukraine, embodying certain features of traditional Ukrainian life and achievements of scientific and technological progress. We gave the definition of Trypillian culture, ecovillage, village, farmstead, house. We also gave our own definition of «ecovillage».

### VETERINARY MEDICINE

**Yevstafieva V. O., Melnychuk V. V., Aliksieieva Ye. O.** Distribution of melophagosis of sheep in farms of Zaporizhzhia region // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 89–91.

We presents the results of clinical and parasitological research on the study of degree of invasiveness of sheep by *Melophagus ovinus* in terms of farms of different forms of ownership (agricultural enterprises, farmers and private peasant economy) in Zaporizhzhya region. It was established that the average extensiveness of melophagosis of sheep population was 29,51 % for the intensity of infestation – 98,29±1,57 instances of insects. The most affected by agent of melophagosis were the causative sheep that were kept in personal peasant and farms than animals belonging to agricultural enterprises.

**Nedosekov V. V., Kozlenko T. G.** Optimization of methods of cleaning and inactivation of feline calicivirus activator of cats // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 92–94.

We found that the best method of obtaining a purified preparation of calicivirus is ammonium sulfate precipitation followed by purification of the antigenic material using gradient sucrose concentration, which enables to obtain purified preparation pathogen, suitable for the production of antigen. Comparative study modes formalin inactivation showed that optimal for virus inactivation is the effect of formalin in an amount of 0,2 % at 37 °C and 72 hours of exposure.

**Prus M. P., Shaidyuk M. V.** Diagnostic methods of canine ehrlichiosis // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 95–98.

It was noted that the issue of diagnosis of dogs' ehrlichiosis is very acute today. The main diagnostic methods and their efficacy at various stages of the disease have been studied. Efficient methods of diagnostics of ehrlichiosis by ELISA method have been identified. Various peripheral blood staining methods are used in diagnosing ehrlichiosis and babesiosis have been compared. It has been noted that identifying *E. canis* in the blood is difficult and

the results are often ambiguous. Smear microscopy (unlike serological tests) allows to diagnose early ehrlichiosis.

**Reshetylo A. I., Nikiforova O. V.** Application macrolides at demodecosis of dogs // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 99–101.

Demodecosis is a common disease among dogs in central and adjoining microdistricts of city Sumy. Over the past three years there was a decrease in the number of detected cases of dogs' demodecosis. The animals under 1 year old have been ailing more frequent – 67,85 %, at the age from 1 to 4 years – 22,62 %, and the amount of incidence of ailing dogs at the age from 4 to 10 years and elder 10 years were 6,0 % and 3,57 % respectively. Demodecosis have been detected in 22 breeds of dogs. Outbred dogs were ailing more frequent, the rate was 15,47 %, Pug dogs – 14,29 % and German shepherd – 10,71 %. EE «Advocate» drug was 90 % and «Dectomax» and «Ivermectin 1 %» – 80 %.

**Shatohin P. P., Suprunenko K. V., Karysheva L. P.** Impact of «Horiotsen» on some biochemical blood parameters in lactating sows // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 102–105.

The paper presents the results of research on the development and implementation of environmentally friendly practices of veterinary preparations, namely placental able to normalize metabolic processes in tissues and restore the structure and function of organs and body systems. We established that the yard at multiple input of «Horiotsen» increased protein levels on 1,5 % compared to the index of the first days after farrowing and 5,3 % – rate of animals in the control group on 28<sup>th</sup> day. Glucose increase after the injection in all groups –  $p < 0,001$ , but in the experimental groups the figure was higher than in the control one by 8,7, 7,0 and 6,1 %. Against the background of hyperphosphatemia content of inorganic phosphorus in the blood of sows of 3<sup>rd</sup> research group on the 28<sup>th</sup> day was 17 Im% lower than in the control group of sows.

THE YOUNG SCIENTIST'S PAGE

**Molchanova A. V.** Ecological aspects of influence of solid domestic wastes in agricultural landscapes, water environment and atmosphere air // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 106–110.

In terms of economic restructuring of Ukraine, new ways, methods and forms of management leads to a growing number of modern industrial and food for the population and, consequently, the growth of solid waste. In the development of human civilization inevitably turns our planet into a huge trash, and nature has no mechanisms of recycling and disposal of waste produced by society because last one accumulates in the biosphere exponentially. Currently, the issue of waste management is next to the environmental pollution from chemical and biological components that are constantly present in them, as well as the protection of public health, which are in the zone of their direct or indirect influence. The problem of waste is a key environmental issues, and all more significant in terms of resource. Landfill – a typical example of human activities. They are characterized by a number of signs of chemical contamination of soil, surface water, soil and groundwater, plant groups, air that are the subject of various environmental studies.

**Natihla I. V.** Hematological parameters at hens of different age groups with capillariasis invasion // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 111–113.

The results of experimental studies to determine the impact of helminths of genus *Capillaria* on hematological parameters of sick chickens of different ages (replacement young chickens of 9–17 weeks old and hens of productive phases) were presented. It is established that the changes in the blood of young chickens, which were infested by

capillaries, characterized by a significant ( $p < 0,01$ ) decrease in the number of erythrocytes, hemoglobin, and an increase in the number of leukocytes at the cost eosinophils, which leads to more severe disease than in the adult birds.

**Gugosyan Yu. A.** Changes in hematological indicators of foals infected by strongyloidiasis // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 114–117.

We studied the influence of the pathogen strongyloidiasis on morphological and biochemical indicators of infested foals' blood. Research has established that strongyloidiasis infestation is accompanied by anemia, leukocytosis ( $13,46 \pm 1,03$  g/l,  $p < 0,001$ ) and eosinophilia ( $9,3 \pm 0,32$  %,  $p < 0,001$ ). In the blood serum of sick horses we evident dysproteinemia with hypoalbuminemia ( $p < 0,001$ ) and hyperglobulinemia ( $p < 0,01$ ), an increase in the activity of alanine and aspartate aminotransferase ( $p < 0,001$ ), the content of total bilirubin ( $15,12 \pm 2,38$  mcmol/l,  $p < 0,01$ ), and reduced glucose ( $3,12 \pm 0,92$  mmol/l,  $p < 0,05$ ).

**Semirenko V. V.** Research of pathomorphological and histological characteristics of pathology of distal limbs in swine // News of Poltava State Agrarian Academy. – 2016. – № 4. – P. 118–122.

The article deals with the analysis of pathomorphological and histological characteristics of individual nosological forms of the pathology of distal limbs in swine: tumor of bone (osteoma), chronic osteomyelitis, atonic ulcer and purulent arthritis. The significant imperfection of structural elements of a bone and soft tissues allowing differentiation of defined above nosologic forms of diseases of distal limbs in swine has been noted. The material of the article will help veterinary professionals to perform a differential diagnosis of limbs diseases in pigs competently.

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