Abstracts of articles

AGRICULTURE

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MONITORING OF ENTOMOCOMPLEXES OF SOFT SPRING WHEAT IN THE FOREST-STEPPE OF SAMARA AREA

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Keywords: wheat, phytophagous, entomophagous, entomocomplexes, dynamics.

The purpose of research is creation of conditions for the formation of self-regulating entomocomplexes in agrocenoses with a significant competitive relations in the cultivation of spring wheat in the non-use of insecticides against pests. Insects was collected with an entomological net for 25-50 flaps in triple repeated in period of vegetation of wheat. In the conditions of the non-use of insecticides of entomokomplexes included insects-phytophagous which are potential vectors of viruses, phytoplasmas; suctorial and gnawing phytofagous; insects are developing inwardly wheat stems; entomophagous. Entomophagous regulating the density of phytophagous were represented by predators and parasites. In 2013-2016 *Phyllotreta vittula, Oscinella pusilla, O. frit* had a high density in the stage of seedling growth, *Haplothrips tritici* – in the stage of stem elongation of spring wheat. Against pests of seedlings in terms of their high density recommended for pre-treatment of seeds of spring wheat before sowing by system insecticide Cruiser, KC, without a negative impact on useful entomofauna of the agro-ecosystems. To the head emergence stage of spring wheat and the beginning of oviposition of *Haplothrips tritici*, its population was effectively reduced by *Aeolothrips pascidutus*. Development of cereal aphids was annualy kept *Hippodamia variegata* (Coccinellidae).

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INFLUENCE OF ABIOTIC FACTORS FOR PRODUCTION EFFICIENCY OF HONEY FROM CROPS IN A STEPPE ZONE OFSTEPPE VOLGA AREA

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Keywords: abiotic, honey, chelopechene, beehive, honey, weight gain.

The purpose of the research is to reveal the features of influence of abiotic factors on the melliferous capacity of the base field rotations and the productivity of bee families in the period of maintenance and the main honey flow in conditions of the Volga region. The experience was laid in 2012-2014 in the Saratov CIS-Volga region, in the town of Balashov. The air temperature was taken into account on the basis of his own observations, and was also used meteorological data of the weather station. In the flowering period of crops daily recorded daily air temperature (1200 hours). The results of observations of the honey yield of honeybees (Krajina breed of bees (karnika) – Apis mellifera carnica Pollm.) in the flowering period of the main agricultural crops – nectarines (legumes, Cruciferae and Polygonaceae) in the steppe zone of the Volga region. The studies were conducted in a stationary apiary, located at 100-150 m from the agrocoenosis. Provides data of daily gain or loss of honey from control hives. Tendencies of influence of meteorological conditions when applying temperature, rainfall and other abiotic factors on the data of the gain control of the honey of the hive in the steppe zone of the Lower Volga region. The highest intensity of the honey production by bees (1375,0-1428,5 g/day) is the daily air temperature is 26±0,70 C, humidity 57-59%, against short-term precipitation and wind speed of 2.8-3.2 m/s. Period sustainable honey collection, including the main honey collection (July 10 – August 10), coincides geographically with prevailing cold North and northeast winds, the negative effects of which are offset by the terrain of the steppe zone of the Lower Volga region.

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PHYTOSANITARY EFFICIENCY PRESOWING SEEDS OF SPRING WHEAT

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Keywords: wheat, treatment, disinfectants, rot, pests.

The purpose of the research is comparative evaluation of drugs for pre-treatment of seeds as regulators of phytosanitary state of agrocenosis of spring wheat yield on different zoned varieties. The damage agrocnosises spring wheat in both years of observation all studied phytophages was below the EPV. On average data best to reduce crop damage striped flea beetles appeared variant NV_101 seed treatment less effective – preparations succinic acid, Appin Extra and Zircon. Among the varieties studied agrocnosises longer damaged by striped flea grade Kinelsky Otrada, less susceptible due to pre-sowing seed treatments were Kinelsky Niva and Kinelsky Anniversary. Chinch actively feeding during the growing during the 2015 compared with 2014, but to reveal the regularities of pre-treatment of seeds of spring wheat on the central leaf desiccation failed when feeding chinch. Presowing treatment of seed of spring wheat had a positive impact on reducing the number of sprout damage on the fly all the studied drugs, indirect impact on the increased resistance to pests damage plants provided growth regulators. Chemical disinfectants – Maxim and Vitaros – consistently reduced the infestation of fungi colonies in two years of investigations. But it should be noted that the growth regulators Appin Extra and Immunotsitofit also significantly reduced the number of agents of root rot, especially on small infected grain. Chemical disinfectants steadily reduced the infestation of grain only at grade Kinelsky Anniversary, other varieties disinfectants showed better performance only on heavily infected grain. The use of growth regulators in the pre-processing of spring wheat variety Kinelsky Anniversary, affected, of course, is positive on the phytosanitary state of the spring wheat crop, that resulting in higher yields.

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SELECTION OF MEDIUM EARLY AND MID-SEASON VARIETIES OF POTATOES FOR THE STEPPE ZONE OF SOUTHERN URALS

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Keywords: grade, potato starch, productivity, marketability, tuber.

The purpose of research is to identify the most adaptive and productive varieties of potatoes for the steppe zone of Southern Urals. The experience was laid by one-factor circuit in 3-fold repetition. The studies were conducted for middle- and middle-early varieties of potatoes domestic and foreign selection. Determined yield, marketability, starch and dry content in potato tubers. At 4 years of data were allocated potato varieties – Artemis (57.8 t/ha), Aerrow (52.0 t/ha) and Romano (49.5 t/ha). Distinguished highest yield of marketable products varieties: Artemis – 97.9%, Tarasov – 97.7%, and Aerrow Romano – 97.4%. The starch content in tubers was measurable by 10.2% (Ed Scarlett) to 16.0% (Kovalenko Memory), and the dry matter content in tubers ranged from 15.6% (Ed Scarlett) to 23.8% (Memory Kovalenko).

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MORFOTIPICHESKY VARIABILITY OF CORN BUGS POPULATION IN THE FOREST-STEPPE OF SAMARA REGION

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Keywords: corn bugs, population, morphotype, variability, phytophage.

The purpose of the research is the improvement of the zonal system for the protection of cereal crops in conditions of forest-steppe of Samara region. Distinctive features of bugs of various morphotypes were drawing of a scutellum and its coloring. At an imago of corn bugs five morphotypes with pronounced signs were allocated, from them individuals of morphotypes 1-3 dominated, individuals of morphotypes 4-5 met seldom in single copies. Also individuals met indistinct signs. The ratio of individuals of various morphotypes of corn bugs in crops of grain crops varied during vegetation and by years. In population of a sunn pest individuals of a morphotype 1 prevailed, 34-80% of the considered individuals fell to their share. The considerable share was made also by individuals of morphotypes 2 and 3, 10-44% and 10-34% respectively, the share of bugs of a morphotype 4 made 0-1%, of a morphotype 5 – 0-2% of the considered individuals. In population of a hottentot bug 34-86% of the considered individuals fell to the share of bugs of a morphotype 1, of a morphotype 2 – 7-44%, of a morphotype 3 – 7-23%. The share of bugs of a morphotype 4 made 0-1%, a morphotype of 5 – 0-3% of the considered individuals. For 2002-2004 researches the share of individuals of a morphotype 1 averaged 51.0% in population of a sunn pest and 53.0% in population of a hottentot bug, the share of individuals of a morphotype 2 made 24.7% and 28.2%, the share of individuals of a morphotype 3 made 22.7% and 17.8% respectively. The share of bugs of a morphotype 4 made 0.4% and 0.2% in population sunn pest and in population hottentot bug, a morphotype of 5 – 1.2% and 0.8% of the considered individuals respectively. Reliable differences on the mass of an imago of bugs and morphometric parameters of a body at males and females of sunn pest and hottentot bug of the dominating morphotypes aren't revealed.

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PRODUCTIVITY AND QUALITY OF WINTER WHEAT VARIETY GRAIN IN CONDITIONS OF MIDDLE VOLGA REGION STEPPE

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Keywords: winter, variety, yield, protein, gluten, vitreousness, nature.

The purpose of research is to increase the productivity and quality of winter wheat variety trials competitive grain varieties, depending on weather conditions. Studied varieties: Povolzhskaya 86, Kinel'skaya 8, Povolzhskaya niva, Konstantinovskaya. Varieties cultivated by traditional technology, the fresh pair. The data for the 2012-2015 biennium. Grain quality was assessed a number of indicators that characterize its physico-chemical and technological properties: nature grain, vitreous, the strength of flour, protein content, adhesive wine. The maximum value in terms of nature is characterized by grain corn all classes in 2013 and 2014 (782-816 g/l). The high rate of vitreous grains observed in 2012, 2014, 2015 (72-92%). Good data on the same data obtained for the protein content, wet gluten flour strength. It was found that the environmental conditions during the formation and ripening of grain in years of research have a significant impact on productivity and ka-honors winter wheat. The study group of varieties set up in the laboratory breeding and seed, has a rapid rate of accumulation of dry matter. They are adapted to the formation of us, full grain in the conditions of unstable arid climate of the Middle Volga region.

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ALFALFA PESTS IN SAMARA REGION FOREST-STEPPE

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Keywords: alfalfa, insects, pests, variety, yield.

The purpose of research is alfalfa yields increasing by crops of different ages in the conditions of forest-steppe of the Samara region. Field studies were carried out in breeding crop rotation of department introduction, selection of feed and oilseeds Volga research station named after P.N. Konstantinov in 2014. Entomofauna alfalfa crops of different varieties and ages were studied mowing butterfly net. More numerous entomofauna was recorded in crops of alfalfa 2011 compared with age-related crops in 2008. Specialized herbivores studied culture were found in the growing season 2014 agrocenoses alfalfa crops – alfalfa tolstonozhka (Bruchophagus roddi Guss), alfalfa semyaed (Tychius flavus), alfalfa weevils (Sitona humeralis Steph.), Alfalfa bug (Adelphocoris lineolatus Goeze), leaf alfalfa weevil larvae (Phytonomus variabilis Hbst.) and larvae of alfalfa bollworm (Heliothis viriplaca Hfn.). Forms relating to herbivores Polyphagous and Oligophagous cereals were also recorded. In addition agrocenoses met: Entomophages predator's cocktsinellidy (Coccinellidae), different types of spiders (Arachnida) and representatives of the family of grasshoppers (Tettigonioidea). Large foliage of alfalfa plants was recorded under option Population 4. Several smaller foliage of plants observed in crops of alfalfa 2011 compared with planting in 2008. On the 3-year agrocenoses best foliage appeared on variety Guzel which had the lowest figures in the age crops. Alfalfa seed yields mainly depend on the age of the studied agrocenosis culture. Alfalfa crop given harvest seeds in 3.6-4.7 times more than the age-crops in 2008. The highest seed yield was obtained from the varieties of Emerald in 2008 and in 2011.

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THE INFLUENCE OF ELECTROACTIVATED WATER BY WATERING FOR COMPOSISION AND PRODUCTIVITY OF LETTUCE

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Keywords: electroactivity, electroactivated, water, catholyte, salad.

The purpose of the study is improving the efficiency of lettuce cultivation by applying electroactivated water (catholyte) for irrigation. Application electroactive water is an ronmentally friendly method of stimulating the growth and development of plants. During laboratory experimental studies on the cultivation of lettuce the influence of different variants of irrigation on the yield of green mass, biochemical-indicators and coefficient of water consumption. In the first embodiment, control is used watering the settled tap water. The second option – watering scheme «water – catholyte», i.e. alternation-mended irrigation water and catholyte, according to the scheme 1:1. The third option – watering scheme «water – catholyte– catholyte» 1:2. The fourth option is only watering with catholyte. The application rate of water to the catholyte is the same. The anolyte in this experiment was used for pre-treatment of soil before sowing. The result is a one-year research found that among the various options elektroaktivisten irrigation water (catholyte) to greater extent influence on productivity. Lettuce have options watering only in the catholyte and alternating watering with plain water and the catholyte is 1:2. The increase in mass of the samples relative to the control (irrigation water) is 17.7% and 36.6%, respectively. Irrigation of the catholyte is et impact not only on productivity but also on the biochemical composition of plants. Reduced with-holding of protein, fiber, sugars and moisture, increasing dry matter content. More economical consumption of irrigation water was carried out in the embodiment of watering plants only in the catholyte. In this case, the consumption of irrigation water amounted to 3.5 g per gram of product. Need to continue research in this direction.

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TECHNOLOGY, MEANS OF MECHANIZATION AND POWER EQUIPMENT IN AGRICULTURE

UDK 338.436:636.2.034.003.13 (470.325)

MODELING OF PNEUMATIC DEVICES FOR MASSAGE OF THE UDDER OF SINGLE-CHAMBER TYPE HEIFERS

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Keywords: heifers, dairy, iron, combo, massage device, pressure.

The purpose of the research is the improvement of pneumatic devices for combined massage of the single-chamber type heifers udder by methods of mathematical modeling. Combined massage the udder of animals, mostly heifers, cattle, implements, usually with the help of machines, consisting of massage of the casing and active or passive working body. By design, they can be single-chamber or multi-chamber. In the apparatus one or other of the types of mechanical component effects on the mammary gland of heifers has a positive effect primarily on its morphological parameters, while the physiological properties of galactopoiesis animals are changing for the better under the influence of pneumatic massage. In the first stage of the simulation examines the process of the flow of air from the chamber with a constant volume through the hole with the same diameter. On the device to massage the udder of heifers includes the power pneumatic chamber with variable volume, which can be performed at the same time or separately with a massage bell and connect periodically or on a continuous basis through one or several calibrated holes. The model of such device is more complicated in the description and can be obtained on the basis of the synthesis of more simple theoretical relations describing the workflow of massage bells and the power of the pneumatic chambers.

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UDK 637.133.1

CELL BATTERY NATURAL COLD FOR COOLING MILK ON FARMS

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Keywords: cooling milk, ice, freezing, energy saving.

The purpose of the research is search and justification of new methods and scientific-methodological fundamentals of reducing energy cooling costs of production of dairy farms in the process of production and processing due to the wide use of natural cold. In recent years there has been a tendency to return of interest in the use of natural cold in the processing and storage of food. The increasing interest in the use of natural cold contributes, above all, the worsening energy problems. The growth of world industrial production requires ever-increasing consumption. This leads to a permanent increase in the cost of energy in agriculture is quite a big effect on the cost of the obtained production. The use of natural cold for cooling milk is a very common trend not only in research and in new ideas of inventors, but also in the production of refrigeration equipment. Use of natural cold are water dishes for dairy farms. Developed dishes simple in design, reliable in operation, does not require complex maintenance, durable and do not use electricity when frized ice and further cooling of milk. The use of such devices will reduce the cost of production and processing of milk on dairy farms and in processing enterprises, reduce the cost of labour staff.

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THE RESULTS OF STUDIES OF THE CRACKS DEVELOPMENT IN THE CYLINDER HEADS OF THE ENGINE YAMZ-238НБ

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Keywords: stress, deformation, fatigue, crack.

The purpose of the study is to identify the maximum depth of the crack does not affect the normal working movement of the gates. To determine the nature and dynamics of growth heattransaction cracking of the cylinder head and waveness the maximum value of the crack depth and without disrupting the normal operation of the engine. Head material is grey cast iron SCH25 implies the presence of graphite inclusions, lamellar form. Also, this material structure is not optimal to improve the heat transfer, which increases thermal stresses. On the surface and the thickness of the firing of the bottom and leads to the appearance of such incidental defects, such as heatmobile cracks inside cylinder jumpers. Therefore, this defect limits the resource base. The study termodecreased depth of cracks was carried out according to the above method. The results of the studies the magnitude of this defect for the engine YAMZ-238НБ showed that the greatest dynamics of development of this defect is observed in inside cylinder the jumper between the injector hole and socket of the inlet valve. This area is characterized by the greatest temperature changes and mechanical stresses along the thickness and width of the site. It is observed during the period of achievements of 2000-3000 hours. Justified and proposed maximum allowable depth of cracks termodecreased for fire bottom of the cylinder heads in which no emergency is occurring defects of this part. This value should be considered the 6.5

mm because remaining intact the thickness of this zone provides the resource of this part until the next major overhaul. Depth control termodecreased of cracks will allow you to save some spare parts for major repairs of the engine to optimize the reuse of cylinder heads of engines.

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JUSTIFICATION OF ROTOR SPEED OF RADIAL HONEY SEPARATOR WITH THE HORIZONTAL FULCRUM PIN

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Keywords: frequency, rotation, cell, frame radial honey extractor.

The purpose of research is increase in effectiveness of pumping of honey in the separator of radial type with a horizontal spin axis of a rotor. Use radial a separator allows to make honey pumping on both sides of a frame at once and places larger quantity of a frames. The radial separator consists of housing and a rotor. The rotor is set in motion via the belt drive manually or the electric motor. The rotation frequency of a rotor of a separator is the major technology factor influencing honey pumping process. With increase in a rotation frequency the centrifugal force providing a honey exit from honeycombs of a frame increases. The high rotation frequency of a rotor with a framework, can lead to destruction of a wax basis of a cellular frame. Low the rotation frequency can become the reason of inexact pumping of honey from honeycombs. In the course of centrifugation the honey which is contained in everyone unit is affected by the gravity, a centripetal force, tangential force of shift of layers of honey, force of reaction of walls of honeycombs. As a result of calculation it is established that the rotation frequency of a rotor depends on such parameters as viscosity of honey, geometrical parameters of honeycombs, distances of honeycombs from a separator rotor spin axis. In the course of work there will be first of all a honey honeycombs located further from a rotor axis. Decrease in cooperative weight of a frame will allow to keep its wholeness and to gradually increase a separator rotor rotation frequency.

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UDK 664.651.4

THE INFLUENCE OF EXTRUSION PROCESSING FOR CHEMICAL COMPOSITION AND FUNCTIONAL AND TECHNOLOGICAL PROPERTIES OF PUMPKIN SEEDS

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Keywords: extruded, seeds, gourd, composition, functional and technological, properties.

The purpose of research is assessment of thermoplastic extrusion influence with Ternova-quannum effect on chemical composition and functional and technological properties of pumpkin seeds, processed together with the shell. Raw crude from shell pumpkin seeds were processed within 10-15 s at a temperature of 130-140^{0}C using a single screw press extruder KMZ-2U, equipped with a vacuum chamber, contributing to the implementation of the new technological possibilities of extrusion processing of vegetable raw materials. Determination of the mass share of moisture, fat, crude fiber and ash was performed using standard techniques. The substance total nitrogen was determined by Kjeldahl method and then converted to crude protein. Water and fat absorption of flour made from extruded pumpkin seeds with shell was determined on the basis of generally accepted methods. The results are presented as the mean value of three repeated measurements. The chemical composition of the extruded pumpkin seeds with shell (mass fraction of moisture, crude protein, lipid, ash and crude fiber) and wheat flour used for production of bakery and flour confectionery products. The results obtained indicate a high content in the extrudate pumpkin seeds with the shell of protein, dietary fiber, palingenesy whelping fatty acids, as well as a wide range of minerals that characterizes the resulting product as an effective Supplement for development of the technology of bakery and flour confectionery products of functional purpose. In addition, high water and fat absorption of the extrudate pumpkin seeds with the shell will generate the given structure, nutritional value, taste indicators and losses in the development of such products.

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THEORETICAL SUBSTANTIATION OF CONSTRUCTIVE AND REGIME PARAMETERS OF MECHANICAL CELLULAR-DISK SOWING DEVICE FOR SOWING AMARANTH PANICULATE

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Keywords: amaranth, seeding, device, drive.

The purpose of the study is improving the uniformity of sowing seeds of amaranth paniculate cellular-disk sowing device. One of the conditions allowing to achieve high planned yield of amaranth is its accurate seeding with specified messagenum interval. Uniform distribution of seeds and plants is necessary due to the high requirements to the area of nutrition. Analysis of the existing agropolicy and designs of modern metering devices for fine-seed crops shows that they do not allow to implement fully agroclavine accuracy of seed distribution in the row when planting amaranth with a variation megamanny intervals (10-15%) and low seeding rate (0.3-0.5 kg/ha), due to the very small sizes of seeds and characteristics of their physical and mechanical properties. In this regard, was developed a constructive-technological scheme of the cellular-disk sowing device, allowing to carry out the sowing amaranth seeds with low seeding rate and high longitudinal uniformity of distribution of seeds in the row. Novelty design cellular-disk sowing device is confirmed by the patents of the Russian Federation for inventions and utility model №61981, №2347349 respectively. The theoretical substantiation of the basic constructive and regime parameters of mechanical cellular-disk sowing device for sowing amaranth, in particular, the analytically determined: unit cell parameters of a seed disc and the velocity of the seed relative to the wire mesh of a seed disc. As a result of theoretical research has been substantiated geometric cell parameters: maximum diameter of the cell Dmax = 1.42 mm, the maximum depth of a cell Nmax = 1.62 mm, and the conditions of collapse of amaranth seeds in a cell, seed disc, namely the critical speed of the seed cattle = to 0.074 m/s and critical frequency of rotation of a seed disc min-1, which will be retraction of the amaranth seeds in a cell of a seed disc.

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VETERINARY MEDICINE AND ZOOTECHNICS

UDK 636.2.082

THE GROWTH AND DEVELOPMENT OF HOLSTEIN BREED CALVES DEPENDING ON THE VIABILITY OF BIRTH INDICATORS

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Keywords: heifer, life, productivity, assessment, criteria, growth, development.

The purpose of research is improving quality indicators of Holstein youth in intensive milk production technology. Experimental studies were carried out on dairy farm GUI SU Kupinskiy Bezenchukskaya district of the Samara region. The material for the study were heifers obtained from cows with different mothers continuedtive physiological periods. We have investigated the influence of cows physiological periods duration by morphofunctional parameters of newborn calves – their growth, development and reproductive qualities. The number of newborn calves, obtained from cows with different mothers about the duration of physiological periods, was formed three groups of animals 10 animals in each according to their belonging to the parent group. In newborn calves-governmental morphofunctional assessment on such indicators as the density of hair, the implementation of standing posture, the implementation of sucking reflex, the amount of O-incisor teeth, blood and tail length distance from the calcaneal tuber hock it was held. It was found that the performance of calves viability depends on the duration of periods of physio-logical cows-mothers. Indicators of morphological and functional assessment of calves at birth determine their further growth, development and reproductive ability. To increase reproductive ability of rearing under intensive milk production technology is necessary to optimize the parameters of physiological periods in cows and led to morphological and functional evaluation of calves at birth.

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THE EFFECT OF MICRONUTRIENT AND PROBIOTIC FOR HEMATOLOGICAL PARAMETERS OF BIRDS

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Keywords: broiler chickens, probiotic, lactoamilovorin, potassium iodide.

The purpose of research is improving physiological and biochemical status and productive qualities of broiler chickens by including basic diet lactoamilovorin and potassium iodide. For experimental studies experimental and control groups formed randomly on the 35 day-old chicks, which were grown in Techa-of 42 days at the cellular content. It was found that the number of red blood cells in the blood of studied groups broiler chickens in the whole investigated period increased. leukocyte concentration was lower in broilers of the experimental group by 2.6%, compared to the control. The hemoglobin content increased in those chenie the entire period of study in a group of birds fed the probiotic and potassium iodide. Statistically significant differences in hematological parameters relative to those of the control group of birds observed in the integrated use of iodine preparations and probiotics in the period from 14 th to 42 th day. At 14, 21, 35 and 42 day old chicks advantage over the control treatment groups on the hemoglobin content amounted to 14.03, respectively; 10.40; 9.79 and 12.28%.Analyzing the morphological indicators of blood of experimental groups, it should be noted that they were within the physiological norm. The maximum effect is the physiological norm was observed in broiler chickens III experimental group, which in addition to the basic diet fed potassium iodide and lactoamilovorin.

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THE EFFICIENCY OF THE IODINE ORGANIC FORM IN BREEDING BOARS NUTRITION

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Keywords: addition, boars, thyroxine, protein, albumin.

The purpose of research is improvement of clinical and physiological state of the organism breeding boars and prevention of iodine deficiency by introducing a basic diet of organic form bioiodine – feed additive «Prost». Production experience on breeding boars Landrace breed – research was conducted. By the principle of analogues, two boars group was formed. The animals were kept under identical conditions. All boars producers received the same feed SC-2 with the same content of metabolizable energy. Diet contain in its composition: 45% barley, 30% wheat; 5% corn; 20% of bvmd. Boars-producers of the control group fed a basic diet (RR) without additives, which conforms to the standards VIZH for this age group. The animal feed of the experimental group were injected with 200 mg per head per day of the feed additive «Prost». Blood for morfogematological studies were taken from the jugular vein at the same time, the chime before feeding. The scientific-production experiment studied the effect of the feed additive «simple» biochemical and morphological parameters of blood boars. As a result of studies, it was found that the inclusion in the diet of the treated group fodder additive, organic iodine content of globulins in the serum of experimental animals was by 5.1% higher than the control group, total protein 7.6%, respectively. The number of red blood cells in the animals in the group with the addition of a «simple» for the test period was higher by 22.1%, 22.1% of red blood cells, hematocrit 17.1%, compared to the control. The study of the white blood boars – when fed feed

manufacturers «just» supplements in the experimental animals was observed decrease in the total number of leukocytes by 5.8%, which contributed to the increase of protective and adaptive reactions and reduced antigenic, toxicological stress for the body, the iodine content to an increase in whole blood by 43.8 and 246.3% for the bristles, thyroxine T4 6.5% compared with the control group.

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SYNTHESIS OF IODINE-CONTAINING NANO-DISPERSED COMPOSITES

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Keywords: iodine deficiency, NMR-, IR-, UV-spectroscopy, nano-sized, chromatography.

The purpose of research is to develop techniques for chemical implementation of the obtained low molecular weight products with covalently bound iodine in the biodegradable matrix (glycyrrhizic acid) with obtaining nanosized composites, capable of metered cleavage of iodine in vivo. One of the vital trace elements is iodine. Adding iodine to food components is an advanced technology and it promotes replenishment of iodine deficiency in human organism. The most interesting compounds wherethe inorganic iodine are chemically bound to the organic matrix. The processes of formation of the complex "o-iodobenzoic acid-*β*-glycyrrhizic acid" and encapsulation mechanisms of 5-iodo-6-metiluratsila in nanoscale biodegradable matrix -*β*-glycyrrhizic acid by using physical and chemical methods of analysis – IR, UV and NMR spectroscopy. The evaluationof nano-sized ofsynthesized iodinebioorganic complexes by laser nanostructured analysis is carried out. The processes of deiodination o-iodobenzoic acid in vivo by high-performance liquid chromatography is examed. The conducted research showsthe bioavailability of synthesized nanostructured iodine organic-mineral complex.

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TREATMENT OF CHRONIC SUPPURATIVE-CATARRHAL ENDOMETRITIS OF COWS PREPARATION MASTOMETRIN

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Keywords: endometriosis, treatment, cow, homeopathy.

The aim of the work is to improve the effectiveness of treatment of cows with chronic endometritis using homeopathic Mastometrin drug. In this work given economic evaluation of the treatment of chronic purulent-catarrhal endometritis in cows using Mactometpin drug in a comparative perspective with the treatment regimen adopted in the economy. The material for the research were the cows of black-motley breed of dairy complex SEC Kuibyshev district Kinel Samara region. Before the start of the experimental work was performed obstetric clinical examination of the animals are not pregnant. Among the cows with chronic purulent-catarrhal endometritis it was formed on the basis of approximate analogs of two groups of cows (control, experimental) on 10 goals each. In the control group of cows treatment of chronic endometritis was performed under the scheme adopted in the farm. The animals of the experimental group were treated with the drug Mastometrin. To determine the cost-effectiveness of Mastometrin drug in the treatment of chronic endometritis, the duration of the analysis of the treatment was carried out in cows; treatment costs compared with the treatment regimen used in the farm. Based on what has been defined income per head. Research evidence that the use of the drug Mastometrin reduces the waning of clinical signs of chronic endometritis and recovery time than with the scheme of treatment used in the farm. Shown Mastometrin economic efficiency of the drug, whereby the drug Mastometrin proposed to use a dose of 5 ml intramuscularly at intervals of 12 hours daily for 7-14 days.

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CYTOMORPHOLOGY VAGINAL SMEARS OF DOGS IN DIFFERENT PERIODS OF THE SEXUAL CYCLE

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Keywords: cycle, cytology, smear, cell, estrus, dog.

The purpose of work is improving the efficiency of fertilization dog breed French Bulldog. The results of cytological examination of vaginal mucus in dogs at different periods of the sexual cycle. This will determine the optimal time for insemination. As a result of vaginal smear cytology of dogs among the signs of days favorable for breeding are the days when cytological smears appear more than 60% of the surface of pycnotic cells, a small amount of red blood cells and white blood cells, superficial cells are arranged in groups of 4-6 cells or clusters in the form of tiles. Proestrus phase corresponds to the presence of only of basal cells in a smear at the beginning. Then trend towards a decrease of intermediate and superficial cell growth. In the smears are found red blood cells and white blood cells. The duration of the stage of 6-8 days. Estrus phase is characterized by the appearance in the smear of more than 60% of the surface of pycnotic cells, a minor amount of red blood cells and white blood cells. The duration of the stage of 10-11 days. It was found that in dogs the most optimal days for mating are 3-4 day estrus. A smear diestrus phase accompanied by the presence of abrupt changes in the cellular structure. The picture a smear vaginal mucus in diestrus are signs are reducing the number of superficial cells, and increasing the number of intermediate cells; changes in the nature and appearance leukocyte, smear of mucus becomes turbid, dusky background. The duration of stage about 60 days. In anestrus cytological picture of the mucous membrane is stable. There are small cell in smears, revealed basal epithelial cells, can occur intermediate unit cells and leukocytes. The duration of the stage about 123 days.

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