ABSTRACT&REFERENCES

DOI: 10.15587/2519-8025.2017.108987

ANALYSIS OF FEATURES AND ASYMMETRY OF AMBROSIA POLLEN DAILY DISTRIBUTION IN AIR OF ZAPOROZHYE

p. 4–8

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For today ambrosia pollen is probably the most important factor of the season allergy in sensitive layers of population and can provoke even the bronchial asthma development. To improve the prophylaxis of allergic diseases, caused by pollen of this plant and to raise the quality of the air-allergenic situation prognostication, it is necessary not only realize monitoring observations, but also to search for interconnections between the amount of ambrosia pollen and factors of environment, able to change its concentration in a cubic meter of atmospheric air essentially. The aim of the research was to analyze some features and asymmetry of ambrosia pollen distribution for pollination days for Zaporizhia city. The period 2006 - 2016 was taken into account in the study. The obtained data were compared with the normal distribution. Monitoring observations were carried out using the volumetric trap, which prototype was a Thirst trap, and obtained preparations were studied under a microscope, the recalculation of the amount of ambrosia pollen in a cubic meter of atmospheric air was realized and the statistic analysis of the obtained results was done using «STATISTICA® program for Windows 6.0». It was established, that the distribution of ambrosia pollen in atmospheric air of Zaporizhia city for blossoming days corresponds to the normal level, and the inessential asymmetry may be caused by the effect of exogenic factors, for example, meteorological conditions. So, for constructing the more precise prognosis of air-allergenic situation, caused by ambrosia pollen, it is expedient to take into account the influence of meteorological factors on pollination

Keywords: *asymmetry of ambrosia pollen distribution, air-allergenic situation, pollinosis, pollination, pollination dynamics*

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DOI: 10.15587/2519-8025.2017.108996

INVESTIGATION OF LIPID COMPOSITION OF BILE IN DIFFERENT SEXES RATS UNDER THE TESTOSTERONE INFLUENCE

p. 8–12

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Essential inter-sexual differences of the lipid metabolism and bile-creation in the liver tissue cause the necessity of substantial experimental studies of the testosterone influence on the bile lipid composition and ratio of lipid components of liver secretion of individuals of different sexes. So, the aim of the work was the study of the testosterone influence on the lipid composition in bile of male and female rats. For attaining this aim, male (n=7) and female rats (n=4) were every day during five days intramuscularly administered with propionate testosterone (0,7 mg/kg in the recalculation of the preparation volume – 1 ml/kg). After that in acute experiments in vivo, the bile tract was channelled using thiopental sodium as anesthesia (60 mg/kg intra-abdominally). In six samples of liver secretion, collected in three hours by the method of thin-layer chromatography there was determined concentration of phospholipids, cholesterol and its ethers, free fatty acids and triglycerides. In both males and females were registered one-directional reliable changes in three fractions of bile lipids – the increase of phospholipids, free fatty acids, cholesterol ethers concentration. But in females after five days load with testosterone was noticed the decrease of bile triglycerides concentration, whereas in males – it increases by 39,09–48,48 % ($p<0,05$) comparing with the correspondent control. So, under conditions of the experiment, the hormone influenced the metabolism and transport of bile lipids in rats of both sexes. At that testosterone caused the more increased incoming of lipids to bile channels in males than in females. Mechanisms of testosterone influence on bile lipid components need the further study

Keywords: *testosterone, phospholipids of bile, cholesterol ethers, inter-sexual differences*

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DOI: 10.15587/2519-8025.2017.109220

INVESTIGATIONS Of THE DUST AIR POLLUTION IN THE PRODUCTION OF POULTRY

p. 12–15

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Aim of research *– to determine the dust concentration in production accommodations and beyond poultry yards in the sanitary-protecting zone of a poultry enterprise.*
Materials and methods. *The research was carried out in zones of location of poultry enterprises of broiler and eggs production. Poultry enterprises are located in Kyiv region in different soil-climatic conditions. The analysis of the content of dust in atmospheric air is realized using aspiration methods. The disperse analysis of dust is established by microscopy methods using a microscope MBI-15. The leaf plate dustiness is established by the bioindication method.*
Results of researches and their discussion. *The results of realized studies testify that the ratio of dust particles of different sizes is different depending on a technology. For example, at keeping poultry at a poultry yard 75 % is fine-dispersed particles less than 5 microns. In feed processing buildings the share of fine-dispersed particles is more (85 %). It was demonstrated that the intensity of the poultry yards working zone air pollution is very high depending on a keeping technology, poultry age, production process. The maximal value of hygienic norms exceed (in 700 tomes) was observed in a feed processing building at forages mixing.*
The method of bioindication using Betula pendula Roth phyto-indicator determined the dust concentration on Betula pendula Rot leaf plate surface. It was demonstrated that the dust pollution is observed also beyond poultry yards, at the distance 2m from discharge sources it exceeds the value in the control variant almost 250 times at keeping the parents' livestock. The concentration decreases with the distance increase.
Conclusion. *It was determined that the quantitative composition of different dust fractions is different. To improve the ecological state of atmospheric air it is necessary to observe veterinary-sanitary norms to provide a microclimate and ventilation. The received results give grounds to state that MAC of working zone air pollution can reach 700 times. BetulapendulaRoth was probated and offered to the use as phyto-indicators of the ecological state of territories of the intense poultry farming*
Keywords: *dust pollution, industrial poultry farming, atmospheric air, bioindication, Betula pendula*

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DOI: 10.15587/2519-8025.2017.109244

INFLUENCE OF LED RADIATION OF VARIOUS WAVE LENGTH ON GROWTH INTENSITY OF *STAPHYLOCOCCUS AUREUS*

p. 16–20

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There are presented the results of the study of led radiation of red-infra-red and blue-infra-red diapasons of Medolight Red and Medolight Blu Doc devices on the growth of clinical isolates of Staphylococcus aureus, and collection test-strain Staphylococcus aureus ATCC 25923.

***Aim of research** – to determine the effect of led radiation on the intensity of Staphylococcus aureus growth on solid nutritive mediums.*

***Materials and methods.** For the research there were taken daily agar cultures of microorganisms, led to the turbid standard 0,5 by McFarland. The obtained inoculum was dissolved in 1,6x10^5 and inoculated again on Petri dishes with further radiation. Separate series determined the influence of led radiation of different wave length, expositions and frequencies. The results were estimated by the calculation of the number of bacterial colonies, grown on Petri dishes, and compared with the control- non-radiated cultures.*

***Results.** As a result of experimental studies it was established, that led radiation essentially influences the microorganism growth. The effect of this influence depended on radiation parameters. At short-term expositions we observed the stimulation of bacteria growth, whereas their increase stimulated the bactericidal effect. Rather important influence was inherent to the frequency of the light flow – radiation with the frequency 8000 Hz most essentially decreased the number of bacterial colonies, comparing with the control.*

***Conclusions.** Led radiation has the photo-modifying effect on studied Staphylococcus aureus strains. This effect was manifested in the bacteria growth stimulation at expositions for 5-10 minutes or bactericidal effect at radiation during 20-25 minutes. At optimal parameters of radiation (exposition 25minutes, frequency 8000 Hz)the number of bacterial colonies decreased by 26-34,5 %, comparing with the control*

***Keywords**: led radiation, Staphylococcus aureus, influence, growth, photomodification, purulent-inflammatory diseases, phototherapy*

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DOI: 10.15587/2519-8025.2017.109290

CHARACTERISTIC OF FEEDING OF MULLET FISHES IN SHABOLATSKY ESTUARY

p. 21–26

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The worsening of the ecological situation in the last years resulted in the decrease of biodiversity and general fish productivity of the saltish-water Shabolatsky estuary, placed in Danube-Dniester interfluves. It doesn't allow to use it effectively for the traditional pasturable cultivation of mullet fish.

The aim of the work was to study the features of feeding, food relations and growth of indigenous species of mullet (stripped mullet, leaping grey mullet, golden mullet) and soiuy mullet acclimater at the pasturable cultivation under conditions of Shabolatsky estuary.

The collection of ichthyological material was realized in 2012–2014. At the study of mullet feeding were used standard methods that allowed to assess season changes of qualitative and quantitative parameters of feeding and food relations of mullet: stripped mullet – Mugil cephalus, golden mullet – Liza aurata, leaping grey mullet – Liza saliens, soiuy mullet – Liza haematocheilus.

For the first time there was given the qualitative characteristics of feeding and food relations of different types of mullet in season and age aspects. It was demonstrated, that leaping grey mullet and golden mullet of all age groups in all seasons of a year prefer animal food; stripped mullet and soiuy mullet – detritus and vegetable food. The most similarity was inherent to the qualitative compositions of rations of yearlings of all mullet species in the spring period (feeding similarity index FSI – 63,0–76,5). In summer the food composition changed (decreased for animal plankton and increased for zoobenthos). The tension of food relations decreased (FSI – 49,8–75,0). In autumn the most similarity of the food character was typical for second-year golden mullet and leaping grey mullet on the one side and second-year and third-year stripped mullet and soiuy mullet (up to 75–89 % of detritus and vegetable food) on the other one. At the same time golden mullet and leaping grey mullet essentially differed from stripped mullet and soiuy mullet by the food character. The decrease of zooplankton and zoobenthos production, noticed in Shabolatsky estuary in last years resulted in the decrease of the growth speed of leaping grey mullet and golden mullet. At the same time essential reserves of detritus of vegetable food provide the intensive growth of striped mullet and soiuy mullet.

In the existent situation it is expedient to use striped mullet and soiuy mullet detritophages as main objects of the pasturable mullet cultivation to provide the maximal fish productivity of the water body.

Keywords: *Shabolatsy estuary, Ukraine, mullet, stripped mullet, leaping grey mullet, golden mullet, soiuy mullet, food composition, indices of food similarity.*

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DOI: 10.15587/2519-8025.2017.109318

THE EFFECT OF SODIUM CHONDROITIN SULFATE ON FREE-RADICAL PROCESSES IN CARTILAGE TISSUE OF RATS WITH OSTEOARTHROSIS

p. 26–3 0

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It was established, that at osteoarthrosis, induced by the administration of monoiodine acetate, the oxide stress develops in the cartilage tissue of knee joints, at that the content of active forms of oxygen and products of lipids peroxide oxidation grows, especially: hydrogen peroxide, superoxide-anion radical, dienoic conjugates, RBA-active products and Schiff bases. Activities of xantinoxidase prooxidant enzyme and antioxidant superoxidysmutase also grew at the pathology. It was revealed, that at administering the preparation on the base of chondroitin sulfate, the content of active forms of oxygen and products of lipids peroxide oxidation decreased in the cartilage tissue of rats with chemically induced osteoarthrosis. The negative control proved that the preparation on the base of chondroitin sulfate doesn't influence the shift of the prooxidant-antioxidant balance in experimental animals. The obtained data testify to antioxidant properties of this preparation

Keywords: *osteoarthrosis, oxide stress, peroxide oxidation of lipids, cartilages, chondroitin sulfate*

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DOI: 10.15587/2519-8025.2017.109302

GENERAL FUNCTIONAL STATE OF THE CENTRAL NERVOUS SYSTEM OF THE FIRST ANA SECOND YEAR STUDENTS OF THE PHYSICAL EDUCATION FACULTY

p. 31–36

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The study of the general functional state of the brain of 175 students of the first courses of the physical education faculty was realized by the data of a simple visual-motor reaction by T.D. Loskutova's method in the state of the relative muscular rest and at the fifth minute of restoration after the physical veloergometric activity by the closed cycle (D.N. Davidenko's method). The studied parameters of the general functional state of the brain of the studied contingent (system functional level, reaction stability, functional possibilities level), despite an age and research conditions, can be divided in three main groups – with the low, middle and high level of the central nervous system. Differences are observed only in the percent ratio of studied persons in groups.

There were established two main types of reaction of the general functional state of youngsters' brain that are characterized by the different directionality, changes depth, quantitative ratio and their dependence on the initial state. The high level of the general functional state of the central nervous system conditions the decrease, and the low one, on the contrary, provides the increase of its criteria under the influence of external factors. The reaction of students' central nervous system must be evaluated by the diapason of shifts from the initial level, according to the "pendulum" law: changes in the diapason ±25 % must be considered as an activation reaction; ±50 % – as a strain reaction and fluctuations more than ±50 % – as a pre-pathology with a possible transfer to the disease state

Keywords: *visual-motor reaction, system functional level, reaction stability, functional possibilities level*

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DOI: 10.15587/2519-8025.2017.109317

THE THERAPEUTIC EFFICACY OF 1-[4-(1,1,3,3-TETRAMETHYL BUTYL) PHENOXY]-3-(N-BENZYL HEXAMETYLENIMINO)-2-PROPANOL CHLORIDE *IN VIVO*

p. 37–39

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The aim *of the research was to determine the therapeutic efficacy of the derivative of arilalifatic amino alcohols 1-[4-(1,1,3,3-tetramethyl butyl)phenoxi]-3-(N-benzyl hexamethylenimino)-2-propanol chloride (compound KVM-194) in experiments in vivo on the model of the generalized infection, conditioned by Candida albicans.*

Methods. *The experimental generalized infection was recreated on white nonlinear mice, using C. albicans 1486 strain. The infecting dose was 10^7 of fungal elements/animal. The efficacy of KVM KBM-194 was determined in the prophylactic, treating-prophylactic and treating regimes at intraoperational administration of the compound in doses 0,01 LD_{50} and 0,001 LD_{50}.*

Results. *It was established, that in the prophylactic regime of use at the intraoperational administration, the compound KVM-194 in a dose 0,001 LD_{50} favors survival of 50 % of animals, in a dose 0,01 LD_{50} – 100 % of infected animals (at 100 % death in the control). At the administration in the treating-prophylactic regime in a dose 0,01 LD_{50} this compound prevent death of 50 % of infected animals. The derivative of arilalifatic amino alcohols revealed the most expressed efficacy at the generalized candidiasis in the treating regime of use: at the administration of KVM -194 in doses 0,001 LD_{50} and 0,01 LD_{50} death of experimental animals is absent (at 100 % of death in the control).*

Conclusions. *The obtained data testify to the efficacy of the derivative of arilalifatic amino alcohols in low doses at generalized mycosis, conditioned by C. albicans, and prospects of the elaboration of an effective antifungal preparation on its base.*

Keywords: *antifungal activity, experimental mycosis, derivative of arilalifatic amino alcohols, C. albicans, therapeutic efficacy.*

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