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Macro- and microscopy of upper parts from Limonium gmelinii genus plants

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Abstract
This article presents data on macroscopy and microscopy of upper parts of plants from *L. gmelinii* genus in accordance with the regulatory requirements for medicinal plants introduced into medicine, by leading pharmacopoeias of the world, in particular by the European Pharmacopoeia, and harmonized with the State Pharmacopoeia of the Republic of Kazakhstan.
Key words: macroscopy, microscopy, plant, upper parts, Limonium gmelinii, pharmacopoeia.

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The peculiarities of lead and cadmium uptake by barley (*Hordeum vulgare* l.) in the presence of edta in the medium

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Abstract

Phytoremediation is a cost-effective and safety technology for cleaning contaminated soils. For phytoextraction of toxic metal as lead (Pb) the main limiting factor is the limited solubility and uptake by plant roots. One of the ways to improve phytoavailability of Pb is the use of chelating agents such as EDTA. It was studied the effects of EDTA on Pb uptake by barley plants parts. The anionic form of Pb [Pb-EDTA] 2- is absorbed in lower amounts by excised roots compared with roots of whole plants and compared with the cationic form (Pb2+) of excised roots. It was established that the concentration of Pb in the roots and aerial parts of the whole plant in the presence of EDTA exceeds the content of this metal in excised roots and aboveground organs. Metal ions are absorbed by plant roots and aerial parts to a greater extent as compared with variants with excised roots and aerial parts. It is explained by participation of transpiration in the process of metal translocation. This confirms the significant role of transpiration in the absorption of anionic form of lead. Similar results in variants with cadmium are received.

Key words: barley, heavy metals, phytoremediation, EDTA, phytoextraction.

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Organochloride pesticides and university Pumpkin germplasm in Kazakhstan

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Abstract
Present study is targeted to the determination of pesticide-resistant plant resources based on available species of the *Cucurbitae* which may be used for phytoremediation of pesticide-polluted soil in Almaty region of Kazakhstan.
Key words: pumpkin, organochloride pesticide, phytoremediation, soil pollution, soil detoxication.

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Ecology-genetical evaluation of environmental pollution (Heavy metalls, radionuclides) on biota and man

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Abstract

By influence of anthropogenic factors is of natural landscape degradation process, less of biota number and links in biocenosis carry out. Environmental factors as pollution have genetical consequences. At the report is showed a research results for more 20 years investigations to evaluation of anthropogenic factors effect on biota and human population.

Key words: anthropogenic, environmental factors, degradation, biota, human population.

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Distribution of microscopic fungi in the different types of soil in Kazakhstan

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Abstract
The paper presents the results of the species community number and structure of microscopic fungi research in different types of soils of Kazakhstan.
Key words: type of soil, microscopic fungi, fungal diversity, number of micromycetes.

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Comparative study on effect of cadmium chloride and supermutagen nitrosomethylurea on soft wheat

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Abstract
Results of cytogenetic study showed that all studied concentrations of nitrosomethylurea and cadmium chloride caused chromosome alterations with frequency, statistically higher than natural level of mutations. In comparison with the toxicant, supermutagen had higher mutagenic activity. Dose dependent effect was shown almost in all variations of the experiment.
Key words: cytogenetic study, chemical mutagenesis, supermutagen, chromosome structure disruptions.

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Effect of the nanostructured carbon sorbent «Ingo-2» and cadmium chloride on limfodynamic and composition of lymph

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Abstract
The effect of cadmium ions and nanostructured carbon sorbent on limfodynamic and composition of lymph was stadies. The experiments showed that prolonged poisoning of rats with cadmium chloride (*per os*) causes changes of biochemical composition and physic-chemical parameters of lymph and blood plasma. The accumulation was marked by of cadmium ions in the lymph nodes, where their concentration is increased 5-7 times of the original level. Using n nanostructured carbon sorbent «Ingo-2» reduces substantially negative effect of cadmium on limfodynamic and indicators of lymph.
Keywords: nanostructured carbon sorbent , composition of lymph, limfodynamic, cadmium chloride, cadmium intoxication.

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Genetic identifi cation of wheat resistance genes to yellow rust

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Abstract
Resistance to stripe rust of wheat introgression lines with efficient gene Yr isogenic lines in Avocet variety was studied. The lines 344 and 345 had a dominant and monogenic nature of inheritance for resistance to yellow rust. Resistance gene of the line 344 was found to be allelic to Yr 5 gene, but for the line 345, it was found to be allelic to Yr 10 gene of Avocet tester. Those tolerant to yellow rust introgressive lines could be widely used as donors of stability in practical selection of soft wheat.
Key words: Introgressive line, wheat, species, genetic analysis, hybridization, resistance to yellow rust (Yr).

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The prospects of biodiesel from microalgae

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Abstract:
Highly productive Chlorella sp. C-2m strain was received, which in future can be used as a source of lipids for biodiesel production.
Key words: highly productive, microalgae, biodiesel production

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Dairy productivity genetic potential of holstein and brown breeds Sires in Kazakhstan

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Abstract

The research focuses on the identification of desirable gene's alleles responsible for milk quality and production. DNA was extracted from 11 blood samples of 5 Holstein ("Sayram" local ecotype) and 6 Brown breed ("Ak-Yrys" local ecotype) for identification and genotyping of kappa-casein, thyroglobulin, prolactin and growth hormone genes by polymerase chain reaction restriction fragment length polymorphism (PCRRFLP) assay. The frequency for GG, GA and AA genotypes of prolactin gene was found to be 0.091, 0.182 and 0.727, respectively. The allele frequency for G and A was 0.901 and 0.081, respectively. Frequencies for BB, AB and AA genotypes of kappa-casein were 0.091, 0.182 and 0.727, respectively. The allele frequency for A and B was 0.901 and 0.081, respectively. The frequency for CC, CT and TT genotypes of thyroglobulin gene was found to be 0.636, 0.273 and 0.088, respectively. The allele frequency for C and T was 0.901 and 0.081, respectively. The frequency for VV, VL and LL genotypes of growth hormone gene were 0.545, 0.366 and 0.089, respectively. The allele frequency for V and L was 0.901 and 0.081, respectively. According to previous studies *GG* genotypes of prolactin gene, BB genotypes of kappa-casein gene, TT genotypes of thyroglobulin and LL genotypes of growth hormone gene are an important factors in increasing milk yield and quality and the results of this study could be used in creating the next generation of valuable animals.

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Development of electrochemical methods of neutralization of nitric oxides, using lump electrodes with developed surface in aqueous solutions

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Abstract
Nitrogen oxides were electrochemically oxidized into nitrates with the goal of decreasing pollution of environment. Results showed that increasing of concentration of electrolyte and increasing the volume of passing gas mixture increases current output. But increasing the current density decreases current output. Results were obtained by using Photo electric colorimeter.
Keywords: Nitrogen oxides, electrooxidation.

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Laboratory Test for Enhanced Oil Recovery with Gellan

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Abstract
This paper contains a brief literature survey on polymer flooding to enhance the oil recovery and the experimental results devoted to study of the efficiency of natural polysaccharide – gellan as an oil displacement agent in comparison with water and poly(acrylamide) (PAA), the latter is traditionally used in oil industry. A series of core materials having terrigeneous and carbonate nature were studied. The porosity and permeability of core materials were determined. Sol-gel transition of polysaccharide – gellan was studied in the presence of NaCl, KCl, CaCl2, MgCl2, and BaCl2. It was found that the effectiveness of salts to enhance gelation of gellan changes in the following order: Ba2+ > Ca2+ ≈ Mg2+ > K+ > Na+. The gel-sol transition of gellan was observed in oil field water with salinity up to 73 g/L. Influence of storage time and temperature on the viscosity of gellan was evaluated. Comparative laboratory experiments on water flooding and polymer flooding methods were carried out on sand-packed model. It was shown that both gellan and PAA show almost equal values of oil displacement coefficient which is equal to 60-65 % while injection of water gives only 30-32 %. Oil displacement process was visualized on cross sections of sand-packed model. Optimal concentration of gellan solution for oil displacement which depends on absolute permeability of rock was found.
Keywords: Gellan, poly(acrylamide), terrigenous and carbonate rocks, sand packed model, water fl ooding, polymer fl ooding, oil displacement.

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Production and modifi cation of sulfurous dyes on the basis of picoline

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Abstract
Interaction of γ – picoline with m-phenylenediamine and sulfur is studied. The obtained product sulfurous dye possesses dyeing abilities. The interaction of the obtained product with methylmethacrylate, butylacrylate and bromous butyl is investigated.
Keywords: modifi cation, sulfurous dyes.

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Development of hydrogelic dressings formulation containing biologically active additive

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Abstract
In article the development of the formulation of hydrogel dressings containing biological active food supplements for the treatment of burn wounds, and the results of the research.

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Synthesis of composite based on vinyl ether of ethylene glycol structured by hydroxyapatite nanoparticles

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Abstract
Millions of people are suffering from bone defect arising from trauma, tumor or bone diseases.Therefore, there is a growing need for the development of biocomposites with excellent bioactivity and compatibility. In this study hydroxyapatite (HAp) nanorod embedded composite was prepared using vinyl ether of ethylene glycol (VEEG) as a matrix. The role of VEEG composition on the crystallite size, degree of crystallinity, functional groups and morphology of nanocomposites were characterised by TEM analysis. The results indicated that the size and crystallinity of Hapnano particles decreases with increase in VEEG concentration in the composite. This shows the size control effect of VEEG concentration on HApnanorods. Due to the chemical bond interactions between HAp and VEEG. TEM micrograph confirms the presence of Hapnano rod crystals in VEEG matrix

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Analysis of the current situation and tendencies of further development of worldwide and local science “safety of water”

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Abstract
The article contains short analysis of the current situation and development tendencies of worldwide and Kazakhstan «water safety» science. There is an explanation of scientific definition “water safety”, of its traditional aspect (in relation with water volumes) and of ecological aspect (in relation with quality of natural water). Special attention was paid for regional peculiarities of water problems in Kazakhstan, i.e.: high deficit of water resources; exceptional pollution of the territory; exceptional self-cleaning capability of the territory and water objects. It is pointed out, that the whole complex of scientific investigations on territory self-cleaning due to wind-distribution of wastes, has not been taken by both worldwide and republican science. There were made local investigations only. Kazakhstan surface waters are of extremely self-cleaning capability, based on hydrobionts, hydro-chemical characteristics and climate conditions: continentality, high amplitude of water and air temperature fluctuations, aridity of the territory (moisture deficit), high sun radiation, severe winter cold, calcium and magnesium carbonate setting, heavy-metals co precipitating.
Keywords: safety of water, hydrochemistry, quality of natural water.

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