

THE STIMULATION OF NITRIFICATION IN AN ORGANICALLY ENRICHED SOIL BY ZEOLITIC TUFF AND ITS EFFECT ON PLANT GROWING

P.J. Leggo *, B. Ledésert **

The adsorption and ion-exchange properties of natural zeolite minerals such as phillipsite, clinoptilolite and mordenite are well studied and these microporous minerals are known to have a high selectivity towards the ammonium ion. Natural zeolites are often found as alteration products of volcanic glass, in deposits of volcanoclastic sediment. In such rocks they are very abundant and commonly exceed 80 percent of the mineral assemblage. Due to their high selectivity towards ammonium ions, rocks containing these minerals can be used to adsorb ammonia from sewage and organic farm waste. It has now been found that a composted mixture of the crushed zeolitic tuff and organic waste will enhance nitrification in soils, when added as an amendment. During composting ammonia, derived from the biological degradation of the organic waste, is adsorbed and ion-exchanged by the zeolite minerals present in the mixture. When added to a soil, nitrification occurs as a result of oxidation of the ammonium ions, first to nitrite and then further to nitrate, together with the production of protons. These reactions were studied in a time-course experiment using the analysis of aqueous leachates taken from untreated and amended soil substrates. Nitrification trends were observed and a linear relationship was found between the electrical conductivity (EC) and the nitrate concentration of the leachates; demonstrating how the ionic mobility of the substrate porewater increases with increase in the degree of nitrification. A comparison of plant growth in substrates without zeolitic tuff with those amended with the organo-zeolitic mixture, showed that plant growth in the amended soil is greatly increased.

THE EFFECT OF AFTERACTION OF CLINOPTILOLITECONTAINING TUFFS APPLIED IN THE SOIL ON THE YIELD OF SOME OF WINE VARIETIES OF GRAPE

T.G.Andronikashvili, M.K. Gamisonia, T.N. Kordzakhia, E.V. Kurtanidze

The research has established positive the effect of (second year of the experiment) application of natural zeolites – clinoptilolitecontaining rocks and on this basis preparatory organo-zeolite (manure) fertilizer on the harvest of some varieties of grape. It showed that under influence of these minerals harvest increases on average 1,3 fold and under influence of organo-zeolite fertilizer in 2,0-2,3 fold in comparison with plants grown on pure soil without mineral fertilizers (absolute background). Qualitative indices of grape juice (sugariness, acidity, density) in the period of the after-action are identical with the results received in the first year of the experiment.

POLLEN MORPHOLOGY OF THE GENUS *CONVOLVULUS* L. (*CONVOLVULACEAE* JUSS.). PART I.

A. M. Hayrapetyan

The study of the pollen morphology of 20 species of the genus *Convolvulus* L. (*Convolvulaceae* Juss.) has been carried out with the help of light (LM) and scanning electron (SEM) microscopes. The pollen grains of all investigated species are 3-colpate, colpi long; ornamentation spinulate (LM) or perforate-spinulate (SEM). For the species *C. cairicus* L. (= *Ipomoea cairica* (L.) Sweet) the 40-46-pantoporate pollen grains with echinate and perforate-granulate ornamentation have been revealed.

MATHEMATICAL MODEL OF NUTRIENT REGIME OF HAPLIC KASTANOZEMS

V. V. Bashirov

Mathematical model of nutrient regime of the haplic kastanozems used for cereals was developed using the Experiments Planning method. Based on the mathematical model and factual indices of fertility criteria the optimum parameters of the model were calculated by penalty functions method using Turbo Pascal programming language. The obtained optimum solutions are: $z_2 = 32,9$; $z_3 = 7,18$; $z_4 = 27,6$; $z_5 = 1,95$; $z_6 = 40,0$; $Y_{max} = 41,41$ quintal/ha.

THE INFLUENCE OF THE ENVIRONMENT POLLUTED FROM THE HEAVY METALS ON THE QUALITY OF MILK PRODUCTS

G. D. Agladze, G. V. Basiladze. E. G. Kalandia

We have studied the influence of containing heavy metals (Cu, Zn, Pb), zogich are in the soil and grass of pastures, located in 9 km radius from village Kazreti, Madneuli mining and processing enterprise, on the milk products of cows. It has been determined that the considerable increasing of Maximum Permissible Concentration (MPC) has been observed in soil, green pasture grass, also in the blood of cows, pasturing on these pastures, as well as in milk products (cheese, matsoni).

THE INFLUENCE OF DEFICIENCY OF NORMS OF IRRIGATION ON PRODUCTIVITY OF AGRICULTURAL CROPS

G.M. Yegiazaryan, H.R. Gevorgyan, R.R Martirosyan

The received analytical regulations give the chance to estimate the influence of irrigating modes with 50 % security on productivity of agricultural crops. The carried out researches allow to conclude, that in modern conditions for the minimum loss of crop, having analyzed the obtained data, we come to the conclusion: to reduce to minimum the loss it is necessary to apply irrigating modes with 75 % of security which must be based on the newest technological methods of definition of total evaporation.

INTRODUCTION OF 2,4,6-TRINITROTOLUENE-DEGRADING BACTERIA FOR THE INTENSIFICATION OF CONTAMINATED SOILS BIOREMEDIATION PROCESS

N. A. Gagelidze, Kh. J. Varsimashvili, L. L. Amiranashvili, E.G.Kirtadze

The ability of bacteria - *Rhodococcus* sp.VCM Ac 1170 str.44 and *Pseudomonas* sp.str. TNT-44, to degrade 2,4,6-trinitrotoluene in black and red soils under sterile laboratory and natural conditions have been studied. Introduction of these cultures into the soil, containing TNT in the concentration 200 mg/kg, under sterile conditions, led to the reduction of toxicant by 87-92% in black soil and by 72-80%, in red soil, at the end of 30 days. At 1mM of TNT contamination under natural conditions, introduction of bacterial strains – *Rhodococcus* sp. VCM Ac 1170 str.44 and *Pseudomonas* sp.str. TNT-44, decreased contamination in black soil by 70-82% and 82-84% in red soil in 100 days.

PHYSICAL-CHEMICAL CHANGES IN MOUNTAIN-FOREST CINNAMONIC SOILS OF SMALL CAUCASUS UNDER ANTHROPOGENIC INFLUENCE

M.P. Babayev, E.E. Mammadov, R.H.Aslanova

The paper deals with the regularity of the changing of chemical, physical-chemical and physical properties of cinnamonic soils. The data from parallel studies of identical soil types of virgin and arable lands (cultivated soil) gave an idea of the present status of the soil anthropogenic changes. As a result of performed investigations, the loss of organic matter, the decrease of total sesquioxides, total absorbed bases, water-stable aggregate and soil pedality ratio, structure deterioration as well as clay fraction diminishing were determined in topsoil.

THE EFFECTIVENESS OF THE INFLUENCE OF ORGANIC - MINERAL FERTILIZATION AND BEE-POLLINATION ON LEGUMES IN NATURAL ECOSYSTEMS AND AGROCENOSIS OF THE BASIN OF SEVAN LAKE OF THE REPUBLIC OF ARMENIA

M.A. Galstyan

The research work stated the effectiveness of organic-mineral fertilization and bee-pollination to the ecological function of legumes in natural ecosystems and agrocenosis of the basin of Sevan Lake of the Republic of Armenia. It is proved that the formation of knobs on the roots of legumes is defined by kind and an ecological condition of its growth. It is turned out that on the effectiveness of symbiotic activity of legumes has great influence on the organic fertilizers (bio humus and manure) and mineral fertilizers bacteriamazation by rhizopeat as well as bee-pollination.

ESTIMATION TURYANCHAY-GEYCHAY RIVERS BASIN'S SOILS WITH USING SOILS-CLIMATE FORMULAS

G. Sh. Mammadov, L.R. Kerimova

In the article has given quality indicators of environment for estimation Turyanchay-Geychay rivers basin's soils with using soils-climate formulas/ In the results of investigation author determined high potency conditions for growing grain, maize, grass, sugar beet mangle and so on. Has showed best soil types and climatic belt for growing different agricultural plant.

SOIL EROSION IN THE RIVERS BASINS OF GEORGIA

G.P. Gogichaishvili, T.T. Urushadze

The research has revealed, that the area of the agricultural zone (up to 1800 a.s.l.) makes 51 789,5 km², i.e. 74 % of the general territory. Arable lands basically occupy alluvial (144 828 hectares), black soils (79 104 hectares), saline (63 665

hectares), chernozems (60 899 hectares), gray-cinnamonic (43 631 hectares), перегнойно-carbonate (32 363 hectares), and brown forest (32 550 hectares) soils. The maximum sum of cultivated lands of the Western Georgia makes 28-40 %, and in East Georgia - 29-33 % from the total area of a catchment basin of the rivers. In Georgia eroded plow-lands make 205,7 thousand in hectares, i.e. 30,5 % of the total arable areas, including slightly eroded - 110,5 thousand ha (16,4 %), moderately eroded - 74,4 thousand ha (11,0 %) and heavily eroded - 20,8 thousand ha (3,1 %). The average annual outwash from the arable lands in catchment basins of the rivers of the Western Georgia is 17,40 t/ha, i.e. it exceeds admissible norm of erosion 4 times. In the catchment basins of the rivers of East Georgia - 10,46 t/ha per year, i.e. 2,5 times more than admissible rate of erosion. Much less than an admissible limit of soils is washed off per year from plow-lands of South Georgia - 3,08 t/ha a year.

POTATO MINITUBER PRODUCTION BY USE OF TISSUE CULTURE TECHNIQUES

A.J. Sahakyan, G.H. Melyan, V. P. Makyan, A. F. Razuk

The article deals with potato minituber production by use of tissue culture techniques. The executed work testifies, that the technology has been developed, which will give an opportunity to organize the production of the high quality minituber of potato.

SPECIES COMPOSITION OF THE FREE-LIVING PROTISTS FROM FOREST AND CULTIVATED SOILS OF THE NORTHERN-EAST AZERBAIJAN

S.A. Eminova

The biodiversity of the ciliates and testate amoebae from forest and cultivated soils of Kuba-Khachmas region of Azerbaijan were carry out. In 2005-2007 years in all were found 140 ciliates and 80 testate amoebae species. 15 ciliates and 12 testate amoebae species were reported for the first time of the Caucasus and Azerbaijan fauna. The species diversity of the soil protests was carry out from the different landscape and cultivate plots.

ECOLOGICAL ESTIMATION OF SOIL COVER OF THE ABSHERON PENINSULA

V.A. Babayev

The paper deals with mathematic- statistical analysis of the investigation of soil, climate and relief of the Absheron peninsula. The ecological values of soil cover of the Absheron peninsula range between 29-60. These parameters are lower than (36-87 marks) bonitet marks calculated over the main diagnostic parameters. It shows that the ecological marks descend as a result of negative influence of these factors while carrying out complex evaluation by accounting soil-ecological factors – influencing ecological condition of Absheron.

BASIC CENOSIS OF HERBAGE OF NATURAL MEADOWLANDS OF EAST GEORGIA AND THEIR IMPROVEMENT

V.G. Iashvili, L.S. Tabatadze, N.Ch. Chaganava

The paper deals with basic cenosis of herbage of natural meadowlands of East Georgia and their improvement. It was stated that mineral fertilizers improve the botanical composition of the herbage mainly at the expense of increasing in them the portion of cereals and decreasing the composition of different herbage. In the course of vegetative phase, the decrease of motley grass and the increase of cereals are observed

CONTEMPORARY SITUATION OF DEGRADATION OF THE SOILS IN THE MIL-GARABAGH PLAIN

S. Kh. Omarov

The special attention is paid to the problems of degradation and measures on its prevention at the present stage of the agricultural development. We have shown different forms of degradation, areas of their localization on the territory of the studied region and have offered the measures on improvement and melioration of this problem.

FORECASTING THE METHODS OF HYDROGEOLOGICAL FLOWING WELLS DISCHARGES

N.L. Melikyan

Single and interactive wells discharges definition method is considered at any moment of time, which have the following specifications: wells discharge and pressure decrease simultaneously and dependence between them is nonlinear. General problem of single and group of interactive wells were solved by mathematical and hydraulic modeling method on net model. The model research data were generalized by theory of similarity and dimensionality and by least square method. And calculating formula (16) for single flowing well discharge definition at the start of operation and the forecasting of it during the time was received. Formula (23) for pressure decreasing at any point of water bearing horizon at any time is suggested too. Testing of this formula by natural research data, which was done by scientific research institute on flowing wells of Ararat valley, gives the base to suggest to use them for flowing wells design and exploitation.

TO THE THEORY OF FLOW IRRIGATION

Z.K. Lobzhanidze

The process of irrigation distinguishes two phases. In the first phase till the critical moment the main expense of water is more, than the expense of water filtering into soil. The water stream is characterized by a vertical forehead, gradually decreasing in length. In the second phase from the critical moment, these expenses are equal to each other, and the forehead height equals 0. Transition from the first phase to the second occurs continuously and smoothly.

THE ESTIMATION OF THE RUNOFF OF BOTTOM AND DIRECT RUNOFF SEDIMENTS OF THE RIVERS IN EAST GEORGIA

R.V. Diakonidze, G. G. Chakhaia, L.N. Tsulukidze, Zh. G. Mamasakhlisi

The paper gives empirical new type dependences for the calculation of runoff of bottom and direct runoff sediments for the catchment of the rivers of East Georgia according to the erosive areas.

THE STUDY OF THE BARRIER PROPERTIES OF THE COMBINED FILMS

Nazani Zandiin, E.G. Mailova

The food-processing industry consumes a wide spectrum of packaging means, which protect products from the influence of various factors of the environment, such as oxygen and water steams. Combined polymer films have the above-mentioned properties. The present paper examines the modifications of the barrier properties of films depending on the thickness of the material, the thickness of separate layers and the modification of their order in the structure of combined materials.

RESEARCHING OF PURULENT WOUNDS DURING TREATMENT WITH MUHIN'S EXTRACT

A.V Vardanian, S.M Ohanjanian

With the aim of research 15 dogs were brought to the clinic of surgery and therapy departments of SAUA, and by principle of analogy were divided into 3 groups (one control and two experimental), 5 animal in each group. Treatment of animals of the control group was realized with the ointment of Vishnevsky, and by preliminary cleansing of wounds with 1:5000 solution of lactat of etacridin. The animals of the first experimental group were treated by oral application of Mukhin's extract in dose of 1 ml to 1 kg of weight, and external fomentation of Mukhin's extract on wounds. Animals of second experimental group were treated only by external fomentation of Mukhin's extract on wounds. Results in the table show that until 15-th day of treatment in animals of the first experimental group epidermisation of wound tissue is observed, which distinguishes from mother tissues by pink color. In animals of the second experimental group crust is observed on the wounds surface. In animals of the control group, wounds considerably decreased in size, whole cavity is filled by granulating tissue, epidermisation has not been finished yet.

CHANGE OF BIOLOGICA: PROPERTIES OF ESCHERICHIA BY COMBINED CULTIVATION WITH CLOSTRIDIA AND STAPHYLOCOCCI

J.V. Nachkebia, M.G.Kapanadze, M.R. Oniani

The possibility of getting hybrid strains by means of crossing of clostridia with escherichia, staphylococci with escherichia, clostridia with staphylococci has been determined. *Cl.perfringens E-242* with the help of conjugation transmitted toxic properties, hemolytic activity, resistance to antibiotics of *E.coli M-17* and isolates of escherichia received from air. *Staphylococcus aureus №209* transmitted toxigenic properties, hemolytic activity, resistance to antibiotics of *E.coli M-17* and isolates of escherichia received from air with the help of conjugation. The staphylococcal recombinants of *E.coli* were less toxigenic than clostridial recombinants of escherichia. *Cl.perfringens E-242* transmitted hemolytic and toxigenic properties to staphylococci and isolates of staphylococci from air, which were less virulent than clostridial recombinants of escherichia. According to electronic microscopic photos it is possible to conclude that the transmission of hereditary signs from clostridia to escherichia and staphylococci, from staphylococci to escherichia is carried out with conjugation among the cells of donor and recipient forming conjugational bridge, or by the junction and forming common membrane.

NERVES OF THE OVARIUM, OVIDICTUS AND UTERUS OF THE EWE

G. T. Ramishvili, V.M. Kvachrelishvili, G. A.Tskvitinidze, N.G. Milashvili

The paper deals with anatomical peculiarities of the inner sexual organs of the ewe sheep according to the macro-micro preparation well-known method. It is stated that ovarium and ovidictus are getting nerves from ovarium nerves; ovarium nerves start from Mezenterium caudalis knot; enters into ovarium legamentum and is divided into secondary ramifications, which join each other and create ovarium plexus. From plexus start ovidictum and uterus horn nerves. Nerves coming out from ovarium plexus straightly enter the organ wall. Ovidictus nerves are divided into secondary ramifications, which with the ramifications coming out from Jorjly caudalis nerves create ovidictus plexus on the organ wall. Nerves coming out from plexus reach organ wall directly. Uterus gets nerves from uterus plexus. The mentioned plexus is divided into four parts – throats, uterus horn cranialis of the body, horn caudalis and the mid part plexus. The most mobile enervation plexus among uterus are uterus throat, horn cranialis and caudal plexus.

CONTENTS OF TOTAL PROTEIN AND PROTEIN FRACTIONS IN BLOOD SERUM OF COWS WITH SUBCLINICAL MASTITIS

G.B. Serobyan, V.V.Khotsanyan, G.G.Petrosyan

As for our researches, contents of total protein in blood serum of cows with sub-clinical mastitis decreases by 1.3g% in comparison with intact animals. Study of different fractions has shown hypoalbuminemia, and, as a result, light α - and β -globulinemia. γ -globuline fraction is an indicator of inflammatory process in the udder. This index was as large as 26.1% in healthy animals, while in cows with sub-clinical mastitis it equals to 33.9%, which witnesses the mobilization of organism immunity against inflammatory process. Shift of milk pH toward alkalosis during mastitis, unlike other inflammatory processes with typical acidosis, has been proved by us for the first time. It is explained by the increase of activity of alkaline phosphatase, as well as contents of Na^+ and K^+ ions in blood. This phenomenon can be used for diagnostis of sub-clinical mastitis in cows.

VIRUS HAEMORRHAGICAL DISEASE OF RABBITS

S. L. Grigoryan, M. A. Sargisyan, A. R. Mkrtchyan

The virus haemorrhagical disease of rabbits was wide-spread infection in Armenia from 1993 to 1997. After applying specific precautionary measures activity of epizootic process fell down and quantity of niduses of infection decreased. The inactivated glycerin formol-vaccine against this infection disease shows high immunogenic activity among vaccinated animals.

THE TEST OF NATRIUM AND VITAMIN E ON RABBITS

L. V. Vartanyan

It was stated, that introduction of natrium selenite separately (in dose 0,2 mg/kg of live weight) and in combination with vitamin E (1 mg/kg of live weight) in the ration of rabbits during 30 days results in the raise of the live weight and development of rabbits. Simultaneously, we observe the development of internal organs and the increase of dry substance in liver and muscles, with testify the activation of biosynthetic processes and metabolism in the organs.

THE ANIMAL HYGIENE AND TOXICOLOGICAL ESTIMATION OF POLYMERIC MATERIALS IN THE CATTLE BREEDING

K. A. Mikadze

Usage of new polymeric materials in cattle breeding is of great perspective, at the same time it is necessary to investigate them in advance for the purpose of environmental protection determination. The paper provides sanitary control methods of “modified propylene” and monitoring results. Clinical-physiological, hematological gas-chromatographic and toxicological analyses were carried out. It is ascertained that migrated substances are safe for laboratory animals – concerning white mice and rabbits. The content of suckling-pigs on the sexes from the polypropylene improves clinico-physiological, hematological indices, also resistance and productivity to 5-10%. Morbidity is lowered 1,5. With the experimental sexes of condition more comfortable, a quantity of microbes is lower by 61%.

THE INFLUENCE OF BROTH ON HEMATOLOGICAL INDEXES OF JAVAKHETI GEESE DURING THE PRODUCTIVITY PERIOD

R.S. Mitichashvili, A.A. Chagelishvili, I.R. Mitichashvili

The paper deals with the determination of the close relations of some hematological indexes with the productivity of all generations (F_0 , F_1 , F_2) of the local Javakheti Geese. (Female and Male) of F_2 generation were distinguished from geese of F_0 generation by the high content of erythrocytes and hemoglobin ($P \geq 0.001$) Hematological indexes of blood reach the maximum in the middle of productivity period.

THE INDEXES OF NONSPECIFIC RESISTANCE OF NEWBORN PIGLETS

T. K. Kurashvili

The article deals with the study of some indices of nonspecific resistance of newborn piglets. The results of carried out investigations have shown that the newborn piglets especially with low live weight by birth, under the effect of lots of factors as well as not getting necessary amount of colostrum, suffer from agammaglobulinemia. The resistance of hypotrophic piglets is so low that specific pathogenes of the disease develop well in them. That can be proved by the results of the experiment for the determination of quantity of escherichia, on mucous membrane of the mouth cavity and in the samples of faces. The experiments have shown, that hypertrophic piglets at 1–5 days of age had 2,5 times more escherichia than normotrophic piglets of the same age.

SCIENTIFIC BASIS OF PRODUCTION TECHNOLOGY OF GEORGIAN TYPES OF GRAPE WINES

N.Sh. Baghaturia, N.A. Begiashvili, B. N. Baghaturia

The paper gives scientific basis of production of Georgian types of grape wines. On the basis of researches of many years carried out as industrial experiment the paper shows the influence of technological factors on the accumulation of organic and mineral substances in wine material and wine received through must fermentation and seasoning of wine material on pulp. The paper also analyzes temporary technologies of production of Georgian types of grape wine

THE ROLE OF BAKERY PRODUCTS IN THE DAILY FOOD ALLOWANCE OF POPULATION

A.I. Nazaryan

The energy values of food were analyzed for grain and annual bread. The information regarding concentration of vitamins and minerals in bakery products is presented. The mismatching of unchangable amin acidities concentration in bakery food products with equal food utilization concept is shown. The facts of damaging an organism as a result of utilization of variety of bread with unsatisfactory concentration of vitamins and micronutrients are presented. Special attention is paid to concentration of organic fibers and their effects on human organism. The importance of each functional ingredient was underlined.

DAMPING AND DRYING OF YELLOW-LEAVES SORTS OF TOBACCO IN THE CONDITIONS OF TAUSH MARZ IN THE REPUBLIC OF ARMENIA

G.M. Harutyunyan

The following conclusions can be made as a result of the carried out research: 1) american sort of tobacco "Virigina" has a high yield (410.0 c/ha). Drying and damping of the "Virigina" sort takes place more quickly than other sorts; 2) the number of Shmucks damping and drying variants under the sun is higher than other variants; 3) the production process recommends the use of drying raw material of tobacco under the sun after damping.

THE METROLOGY OF CHROMATOGRAPHICAL WINE ANALYSIS

Sh. I. Shatirishvili, K.I. Beriashvili, Sh.K. Gigilashvili, G.V. Osepaishvili, I.Sh. Shatirishvili

As it is known, wine is considered as a unique system and it is difficult to metrologically estimate the results of its analysis. Sharp surplus of two components, water and ethanol, makes not only the process of analysis much more difficult, but also complicates to estimate the metrology of chromatographical analysis. The primary information was gathered according to the duration of retention and the volume of retention. In addition, the metrological characteristics of the data on comparative time of retention of determining substances were identified. As the criteria of repeated results received by methods of chromatographical experiments we used an absolute ($S_{abs.}$) and comparative standard deviation ($S_{st. dev.}$) and the coefficient of variation (W).

INVESTIGATION OF STORAGE STABILITY OF NATURAL FOOD RED COLORANT FROM POKEBERRY AND GREEN TEA

N. I. Mehedlisvili, N.T. Omiadze, L.K.Gulua, M.O. Abutidze

Chemical composition of a natural red food colorant from pokeberry (*Phytolacca Americana* L.) and green tea was determined. The natural colorant was rich in red pigments and other biologically active compounds including polyphenols and pectic substances as well as in beneficial trace elements such as iron, zinc, manganese. The red colorant showed high stability during storage. There were no changes in the content of biologically active compounds, antioxidant activity, pH value and λ_{max} (the wavelength of the most intense absorption) of the colorant for 12 months. The biologically active natural red colorant from pokeberry and green tea with good storage stability may be successfully used in food industry to color different kinds of food products.

DIVERSITY OF ENDEMIC PLANT SPECIES OF ADJARA-SHAVSAT FLORIST REGION

Z.K. Manvelidze*, Ö. Eminağaoğlu, N.V. Memiadze*, D.Sh. Charazishvili***

Diversity of local endemic species spread in Adjara- Şhavşat florist region is discussed; existence of 48 endemic species of narrow local spread of plants is justified that unite in 25 families of 40 genus. The endangered threat categories are defined according to IUCN criteria, as well as responsibility of the county in order to maintain them globally and *in situ* and *ex situ* conservation activities are envisaged.

METABOLISM IN CANADIAN POPLAR GROWING IN PLANTATIONS WITH DIFFERENT DENSITIES

A.M. Pahlevanyan

Explored free from lake Sevan watering grounding plantation different density influence on Canadian popular metabolism. Proved, that in tree's leaves and roots are carbohydrates nitrogen and phosphorus connection's changes, for good microclimate's creation, middle density in plantation (5-6 thousand tree/he) pass more intensive than rare (1-4 thousand tree/ha) and density (8-10 thousand/ha) in plantation.

ECOLOGICAL ESSENCE OF DYING OUTYEARLY SHOOTINGS OF GEORGIAN OAK (*QUERCUS IBERICA* L.) SEEDLINGS

J.V. Lomidze, R.B. Bidzinashvili, M.E. Elbakidze, N.A. Tskhadadze

The paper deals with the peculiarities of natural restoration of Georgian oak tree (*Quercus iberica* L.) under different micro ecological conditions. The paper gives the influence of soil moisture and light intensity upon the growth and development of the off springs and young plants of the oak trees.

THE MOSAIC OF ECOLOGICAL AND OTHER VALUES OF THE FOREST ECOSYSTEMS IN DILIJAN NATIONAL PARK

O. I. Sayadyan, G. Barakat

“Dilijan NP” (National Park) is well known for its forest landscapes, medicinal mineral water springs, nature monuments and historical-architectural monuments. The goal of this paper is to spotlight on the unique mosaic of ecological, social-economic, historical-cultural, recreational and tourist values. One of the major ecological values is the existence of the relict species such as yew (*Taxus baccata*), Caucasian rhododendron (*Rhododendron caucasicum*) dating from the tertiary era, as well as pine, oak and beech unique stands. The other value includes several edible and medicinal species, 257 unmovable cultural and historical monuments registered in “Dilijan NP” and its buffer zone, dating from early ages of Stone Age up to our century.

THE ISSUES OF AGRICULTURAL INTEGRATION OF GEORGIA

N.I. Karkashadze

The paper deals with the theoretical issues of integration of agricultural production of Georgia in world agriculture and the countries of South Caucasus. It gives the possibilities of integration of Georgia with Turkey not only in agricultural production but also in tourism. The author introduces a number of scientific- grounded propositions on the integration of the countries regarding their interests and economic advisability.

DETERMINATION OF THE PROSPECTS OF ECONOMIC INTEGRATION

V.V.Kakabadze, M.V. Papundze

The article deals with the determination of the prospects of economic integration. It was stated that the acceleration development might be achieved most successfully through the intensification of the economic relations between the neighboring countries within various forms of the economic integration frames.

PERSPECTIVES OF ASSETS SECURIZITATION IN THE BANKING SYSTEM OF ARMENIA

S.S. Sukiassyan

Basic regulation of laws RA are studied thoroughly in the articles on «About asset securitization and securities, provided by assets» and «About the collateral mortgage bonds» in the sphere of world financial crisis. The boundaries of application of law regulations are discovered, with the aim of consequent increase in the volume of bank financing.

PROBLEMS OF LIBERAL ENTERPRENEURSHIP IN THE REPUBLIC OF ARMENIA

G. J. Shmavonyan

In the paper the author has presented the interpretation of liberal entrepreneurship concept, interrelation of business freedom and business regulation, justified the distinction between market and liberal economic reforms, revealed the imperfection of entrepreneurship freedom assessment applicable methodology, propounded his treatment of economic liberalism policy under financial crisis.

RATIONAL WATER USE AND ECONOMY OF WATER RESOURCES IN IRRIGATED HUSBANDRY

I. A. Talibov

The economy of water resource is a problem of paramount importance. Water is main creating factor in irrigated husbandry, the most high-priced and deficit resource. More than 1/3 of the expenses in prime cost of the product, received at irrigation, form the expenses connected with presenting of water. Together with that using the progressive technology irrigation brings about spare watering of water in 2-2,5 times and increases harvest in 1,5-1,7 times.