

# ABSTRACTS

## AGRONOMY

УДК 634.721/.721:631.8:631.559:631.445.4

V.F. Severin

### INFLUENCE OF MINERAL FERTILIZERS PREPLANTING APPLICATION ON YIELD FORMATION IN BLACK CURRANTS ON LECHED CHERNOZEM

**Key words:** Primorsky Champion variety, pre-planting application of mineral fertilizers, nitrogen, phosphorus, potassium, first year of fruiting, scheme of the experiment, productivity, currant.

The data is given on the field experiment concerning the influence of pre-planting application of different quantities of nitrogenous, phosphorous, and potash fertilizers in four-year-old black currant bushes of Primorsky Champion on their variety fruiting. These fertilizers are proved to be a powerful factor in yield formation regulation and the potential productivity on the assumption of balanced nitrogenous-phosphorous-potash nutrition 1:3:1 and 1:3:3 on leached chernozem makes up 60.4 and 60.3 t/ha.

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УДК 633.37

V.G. Khramtseva,  
V.V. Ostapenko,  
R.A. Andreyeva

### LONG-TERM USAGE OF CEREAL AND GOAT'S RUE MIXTURES

**Key words:** goat's rue, cereal, grass mixture, long-term, fertilizer, plant height, participation dynamics, productivity, energy amount, protein amount.

Based on ten years experiment, data are represented on the dynamics of the sowed grass component relationship and the productivity of the grass stand when cultivating the goat's-rue

grass in combination with reed fescue, meadow fescue, awnless brome and timothy grass under three regimes of mineral fertilization – without annual fertilization, and with application of  $P_{60}K_{90}$  and  $N_{60}P_{60}K_{90}$ .

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G.G. Morkovkin,  
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**INTENSITY OF MINERALIZATION OF GREEN MANURE AND CHANGE OF HUMUS CONTENT IN LEACHED CHERNOZEMS OF TEMPERATE ARID AND GROVE STEPPE OF THE ALTAI REGION**

**Key words:** green manure, fertilizers, humus, soil fertility, mineralization, humification, leached chernozems.

Research results of mineralization of green manure are presented. More active mineralization of peas, peas-oats mixture, buckwheat, and less active mineralization of wheat and weeds mixture was revealed. Green manure application increases relative humus content by 4.6-11.2% on average.

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## AGRICULTURAL ECOLOGY

УДК 630.114.12 (571.122)

L.M. Burlakova,  
Z.G. KhludentsovESTIMATION OF SOILS IN THE AVERAGE TAIGA ON FOREST DENSITY  
AND FUNCTIONS OF THE FOREST

**Key words:** silvicultural estimation, average taiga, soil factors, forest density, environmental function of the forest.

Soils and soil cover on the left bank of the Konda River in the Kondinsky District were examined, as well as their qualitative characteristics towards timber capacity and environmental function of the forest. The techniques of mapping, appraisal, information-logical analyses were used.

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УДК 581.142

T.V. Poluboyarova,  
T.I. NovikovaWILD ONIONS OF *ALLIUM L.* GENUS, *MELANOCROMMYUM*  
WEBB ET BERTH. SUBGENUS GERMINATION *IN VITRO*

**Key words:** ornamental wild onions, seeds germination, *in vitro*, growth regulators.

The influence of sowing time, temperature and growth regulators on germination of wild onions seeds of *Melanocrommyum* subgenus were studied *in vitro*. Onion's specific characteristics were revealed by determination of the period of seeds germination. The optimal temperature for seeds germination is 5°C. The best growth regulator stimulating the germination of onion's seeds is 6-benzylaminopurine in the concentration 2 mg/l.

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УДК 582.998.4 (571.1)

M.S. Ivanova,  
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#### ECONOMICALLY SIGNIFICANT SPECIES OF *TARAXACUM* WIGG. GENUS (DANDELION) IN ALTAI MOUNTAIN COUNTRY

**Key words:** *Taraxacum*, dandelion, Altai Mountain Country, economically significant species, medicinal plants, food plants, melliferous plants, fodder plants, veterinary medicine, introduction, ornamental plants.

Of 48 species of *Taraxacum* Wigg. genus found in the territory of the Altai Mountain Country, nine are of significant economic value. They are mostly used in medicine (3 species), in veterinary medicine (2 species), in cooking (1 species). 2 species can be a reserve source of alkaloids, 5 species - of rubber. All species of Altai dandelions are melliferous plants and fodder plants. 3 species can be used in gardening.

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УДК 631:57(075)

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**HYDROTHERMAL CONDITIONS OF LEACHED CHERNOZEM FOR CULTIVATION OF ONION  
IN THE OB AREA OF ALTAI REGION**

**Key words:** onion, soil profile, genetic horizon, moisture content, accumulated temperatures, leached chernozem, heat flow, hydro-physical properties, density, hydro-conditions.

Onion crops determine the hydrothermal conditions of chernozems being conducive to thermal storage in the root zone.

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**EFFECT OF HYDRO-THERMAL REGIME OF SOD-PODZOL SOILS OF BELT PINE FORESTS  
OF THE DRY STEPPE AREA OF THE ALTAI REGION HAVE BEEN EXPOSED TO PYROGENIC  
IMPACT ON NATURAL RESTORATION OF PINE**

**Key words:** belt pine forests, pine, forest fire, soil temperature, soil moisture, hydro-thermal regime, dry steppe area.

There is an attempt to reveal the influence of hydro-thermal regime of sod-podzol soils of the south-west part of the unique belt pine forests of the Altai Region which have been exposed to intensive pyrogenic impact on natural restoration of pine. Some practical recommendations for forest restoration measures in the dry steppe area of the Altai Region are proposed.

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## ECOLOGY

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Z.M. Isimbekov,  
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### ANNOTATED CATALOGUE OF ZOOPHILOUS FLIES SPECIES (DIPTERA, CYCLORRHAPHA) LITTLE-KNOWN IN KAZAKHSTAN

**Key words:** zoophilous flies, family Syrphidae, family Empididae (*Pipizella mongolorum*), family Fanniidae (*Fannia latifrontalis*), family Calliphoridae (*Booponus borealis*, *Boreellus atriceps*), little-known species, fauna of Kazakhstan.

The species of zoophilous flies for the first time found in highly elevated pastures of South-West Altai and little-known for the fauna of Kazakhstan are described.

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**INTERRELATED VARIABILITY OF MORPHOMETRIC CHARACTERISTICS OF ARTEMIA  
IN THE BOLSHOYE YAROVOYE LAKE**

**Key words:** artemia, monitoring, population, generation, morphometric characteristics, variability, correlation coefficient, coefficient of determination.

Comparative analysis of two correlation matrixes including 12 parameters of Artemia adults from two generations (the Bolshoye Yarovoeye Lake, 2007) was conducted. The influence of habitat conditions on general and interrelated variability as well as on the correlation structure is revealed.

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**TECHNOLOGIES AND MEANS OF AGRICULTURE MECHANIZATION**

**SUBSTANTIATION OF CHARACTERISTICS OF ACCELERATING DISK  
ON CRUSHERS WITH VERTICAL SHAFTS**

**Key words:** crusher, speed, energy capacity, accelerating disk, intensification of crushing, theoretical calculations.

The influence of accelerating disk on crushers with vertical shafts was studied. Power consumption of the disk and its influence on the angle of setting of vanes was determined.

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S.A. Korostelyov,  
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D.P. Bokin

### INFLUENCE OF LOADING CONDITIONS ON THE MECHANICAL CHARACTERISTICS OF THE MATERIAL OF RUBBER PARTS IN RUBBER-METAL SWIVEL ON THE TRACK MOVER

**Key words:** viscosity module, regime, loading, strain rate, track mover, hydrostatic pressure, hinge.

On the basis of experimental research the influence of loading conditions of rubber elements of track mover on their mechanical properties and properties of the material was estimated. It has been revealed, that the viscosity module of the material of elastic elements of the rubber-metal swivel decreases with the increase in speed of deformation, and increases with growth of the hydrostatic pressure caused by the assembly of the hinge.

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### INCREASE OF THE MANEUVERABILITY OF MOVEMENT OF MOBILE MACHINES

**Key words:** mobile machine, bolster lorry convoy, device for folding prevention, backing, maneuverability, folding angle, controlled wheels turning angle.

The paper describes the design of device for prevention folding of parts of a mobile machine, and the results of experimental and theoretical research of influence of that device on maneuverability of movement of hinge-connected mobile machine.

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## PROCESSING OF AGRICULTURAL PRODUCTS

УДК 637. 051

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### INFLUENCE OF PROTEIN-CONTAINING ADDITIVES ON QUALITY OF MEAT DELICACIES

**Key words:** protein-containing supplement, biological and nutritive value, organoleptic evaluation, meat delicacies, quality.

Application of protein-containing animal supplements "Belkoton" promotes increase of finished products output by 8% more, than provided by the application of the vegetable supplement "Supro-595" and improves the organoleptic evaluation of meat delicacies.

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УДК 637.5.03

K.Z. Amirkhanov

### TECHNOLOGY OF PRODUCING MULTI-COMPONENT COMPLEXES

**Key words:** multi-component salt liquor, whole blood, blood plasma, fat, moisture, fat emulsion, protein, adhesion, emulsifier, stabilizer, odour, volatile matter, taste and odour formation.

The ways to get protein complexes of recycled meat sub-products – blood, broth, fat, etc., are discussed. The mechanisms of formation water-fat emulsions, types of stabilizers, emulsifiers and fatty components are described. The results of identification of volatile components of protein complexes are presented. Positive effect of protein complexes on organoleptic and physical-chemical indicators of meat products of horse-flesh is revealed.

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## ECONOMICS OF AGRICULTURAL INDUSTRY COMPLEX

УДК 338.43(571.15)

A.I. Kolobova,  
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### PROSPECTS OF DEVELOPMENT OF AGRICULTURAL ENTERPRISES WITH COMMON FORM OF OWNERSHIP

**Key words:** agricultural enterprises, activity models, types of fictitious businesses, alternatives of reform, legislation.

The activity models as well as causes and alternatives of reform are identified for the agricultural enterprises of the Altai Region. The basic prospects of their development are substantiated including the necessity to form the new mechanism of economic management.

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УДК 338.436

L.A. Krokmal

### THEORY OF RESTRUCTURING OF AGRICULTURAL ENTERPRISES BASED ON THE CLUSTER GENERATION

**Key words:** agricultural reform, restructuring of the system of administration, intensification of soviet-type institutions, theory of dependence on the trajectory development, evolutionary theory of the form, agricultural integrity, cluster policy.

Agricultural reform in Russia reproduced and strengthened soviet types of institutes. That is why the reforming of agricultural economics must be built on previous institutional structures and reforms must envisage their gradual enhancement towards the adaptation to the market.

The grounds of the cluster approach are described which makes it possible to use the national historical experience of the development of the branch in the development of modern agricultural reforms in Russia.

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УДК 338.436.33

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### STRUCTURING RESOURCES POTENTIAL BY MEANS OF ECONOMETRIC MODEL

**Key words:** econometric model, labor potential, resources potential, agricultural production, integral estimation, agricultural lands.

Econometric model – production function by Cobb-Douglas was used for the integral estimation of the resources potential of the region. It was revealed that the results of agricultural production are less dependent on the total area of agricultural lands while significance of labor and technical potentials is increasing.

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УДК 631.115.1

S.V. Belyayeva

### SUBSTANTIATION OF NECESSITY OF CREATION SUBSIDIARY PRODUCTIONS IN SMALL AGRICULTURAL ORGANIZATIONS

**Key words:** subsidiary production in agriculture, factors determining necessity of subsidiary activity, geographic location of an enterprise, construction facility, agricultural machinery garage, low level of sales profitability, marketing service, mushrooms and berries purchase locations, electronic system of mushrooms and berries trade, cost-effectiveness.

Small agricultural organizations are experiencing economic and financial crisis. Development of subsidiary productions is a way of increasing efficiency of their economic activity. Creation of building facilities and purchase of mushrooms and berries will allow to small agricultural organizations to increase profitability of their production more over 18 percent.

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### SOME PECULIARITIES OF THE DEVELOPMENT OF EDUCATIONAL MARKET IN COMPETITIVE ENVIRONMENT

**Key words:** educational services market, structure of forming of educational market, theory of "spontaneous order", demands of the labor market.

## ABSTRACTS

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It is necessary to analyze the educational market in the Altai Region. The market of educational services is formed "spontaneously", disregarding the demands of the labor market. The established disproportions in training specialists influence on staffing in the region. As a result of the investigation a new structure of the educational market forming is proposed, which is more equitable to the interest of the state and the society.

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