

# ABSTRACTS

## AGRONOMY

УДК 582

O.A. Yelchinina,  
O.S. Kudryavtseva,  
D.B. Stont

**EFFECT OF PLANTING DEPTH AND CULTIVATION TECHNIQUES  
ON YIELDS OF CRUDE DRUG AND SEED PRODUCTIVITY OF PURPLE ECHINACEA  
IN THE LOW-HILL TERRAINS OF THE ALTAI MOUNTAINS**

Effect of planting depth and cultivation techniques on yields of crude drug and seed productivity of purple echinacea in the low-hill terrains of the Altai Mountains were investigated. It was revealed that optimum planting depth on the soils of heavy granulometric composition is 3 cm.

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УДК 364.1 (571,51)

L.R. Mukina,  
A.A. Shpedt

**EFFECT OF FERTILIZERS ON THE YIELDS OF SPRING WHEAT ON GRAY FOREST SOIL**

In the conditions of field experiment on gray forest soil in the taiga zone of the Yenisei District of the Krasnoyarsk Region effect of mineral and organic-mineral fertilizers on the yields of spring wheat was studied. Agri-economic evaluation of the effectiveness of the fertilizers' application in the field experiments is presented.

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УДК 633.16:631.528

**S.A. Yemelyev****EVALUATION OF THE BIOS-1 BARLEY VARIETY'S MUTANT FORM**

Studying mutant action of urea, laser and far red light on the spring barley of the Bios-1 variety the collection of 50 mutants has been created at the Department of Plant Breeding and seed growing of the Vyatka State Agricultural Academy. 10 specimens were sent to the collection of N.I. Vavilov Research Institute of Plant Industry. 11 mutant forms were tested in the control nursery and in the competitive strain testing (CST) – 2. Mutant 5-26 received by the wetting seeds in the urea water solution with the concentration 0.03 M, revealed the best cropping capacity CST – 0.57 t/ha as compared with the original Bios-1 variety. Mutant 5-26 is characterized as early ripening, and in 2006 was submitted to the state strain testing as the Slobodtskoy variety.

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УДК 633.15:579:631.8

**L.I. Shalaginova,  
V.V. Khvoina****EFFECT OF ZYMOGENIC MICROFLORA AND NUTRITION ELEMENTS  
ON THE YIELD OF GREEN MASS OF CORN WHEN APPLYING FERTILIZERS  
ON DARK-GRAY FOREST SOIL**

Direct action of fertilizers on zymogenic microflora, nutrition regime and yield of corn green mass on dark-gray forest soils in the Talmenskiy District of the Altai Region was studied. It was revealed that the action of organic and mineral fertilizers affects positively on the amount of zymogenic microflora (meat-and-peptone agar, starch-and-ammonia agar, fungi, cellulose-decomposing), NPK content and the yield of corn green mass. The model for evaluation of effective fertility of the dark-gray forest soil with reference to corn is proposed.

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**AGRICULTURAL ECOLOGY**

УДК 631.6

**V.V. Volnov,  
A.V. Boyko,  
Y.A. Sukharkov****SNOW COVER DISTRIBUTION PECULIARITIES  
IN THE COMPLEX TERRAIN WATER-SHED AREAS OF THE ALTAI PRIOBYE**

Four-year data on accumulation and distribution of winter precipitation in the agricultural landscapes of varied terrain of the Altai Priobye are presented. Regularity of snow accumu-

lation depending on the relief elements and agroforestral measures was revealed. On the slopes exposed to winds 46-58% of the winter precipitation are accumulated, on the leeward slopes – 60-70%, on the fields with windbreak – 83-96% are accumulated.

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## **ANIMAL PRODUCTION**

УДК 636.237.1

**Y.Y. Lebedko**

### **BREEDING AND GENETIC ASPECTS OF EVOLUTION OF BROWN BREEDS OF CATTLE IN THE NON-BLACK SOIL ZONE OF THE RUSSIAN FEDERATION**

The main aspects of evolution of brown breeds of cattle in the Non-Black Soil Zone for the previous 50 years are presented. Based on data provided by the multiplication breeding farm Krasny Rog of the Bryansk Region and the breeding farm Proletary of the Vladimir Region, the dynamics of changes of vitally important parameters of cattle of the Schwyz and Kostroma breeds is outlined.

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УДК 636.5/.6.084.52:579.252.55

**A.M. Bulgakov,  
N.A. Nevinskaya**

### **THE INFLUENCE OF BIOLOGICAL AVAILABILITY OF IODINE ON GROWTH, DEVELOPMENT OF REPLACEMENT GILTS AND THEIR REPRODUCTIVE QUALITIES**

In the Altay Region as a result iodine deficiency in the soil, water and forages, and as a result of reduction in activity of thyroid gland, animals do not completely reveal their productive qualities. Mainly, iodine plays a primary role in structure of starch which in turn serves as its stabilizer. Using mixed fodders and a preparation of iodine increase daily average growth of gilts for the period of their growth by 17-19%. Livity index increases by 1.8 units, the amount of embryos increases by 20-31%, the amount of yellow bodies increases from 7 up to 16.2%, the weight of ovaries increases by 23.6-43.6%. An embryonic death rate decreases by 9-11%. The highest productive and reproductive qualities of gilts are revealed when they are fed mixed fodder, and also when iodine is introduced twice in the form of injections of iodide starch solution. The first doze of iodine made 12.7 mg/head at live weight of 40 kg, the second made 24.2 mg/head at live weight of 70 kg.

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УДК 636.5/.6.084.52:579.252.55

**A.M. Bulgakov,  
N.A. Nevinskaya,  
V.V. Korolyov****COMPARATIVE EVALUATION OF MINERAL AND VITAMIN PREMIXES EFFECTIVENESS  
IN GROWING REPLACEMENT GILTS**

World experience has proved that the major factor of increasing reproductive qualities when growing replacement gilts is the use of complete mixed feeds and transition from mixed fodders confirmed by the State Standard to address individual formulas. At carrying out of comparative evaluation of mineral and vitamin premixes the best result was achieved when using complete mixed feed with the developed address formula along with introduction of iodine microelement in the form of injections of iodide starch. It proves to be true by increase by 19% of daily average gains of replacement gilts during the period of their growth. Livy index increases by 1.8 units, the amount of embryos by 27%, the amount of yellow bodies - by 11%. The weight of ovaries increases by 36%, and embryonic death rate decreases by 11%. To obtain high productive and reproductive qualities of replacement gilts it is necessary to use complete mixed feeds, and iodine should be introduced twice in the form of injections of iodide starch solution. So, the first doze of iodine makes 12.7 mg/head at live weight of 40 kg, the second doze – 24.2 mg/head at live weight of 70 kg.

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УДК 636.5/.6.084.52:579.252.55

**S.V. Stankevich,  
I.I. Bochkaryova,  
T.I. Bokova,  
K.Y. Motovilov****OBTAINING QUALITY PRODUCTS  
OF POULTRY FARMING USING PREPARATIONS CONTAINING SULFUR**

The paper deals with the search of preparations reducing the influence of toxic elements as lead and cadmium in the organism of a bird. When consuming feeds contaminated with toxicants, their amount in tissues and organs increases sharply.

Preparations containing sulfur reduce the concentration of metals in live organism and improve physiological condition of a bird. It allows to obtain quality products of poultry farming.

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## VETERINARY MEDICINE

УДК 619:598.2/.9:578

**N.N. Yelistratov,  
A.Y. Bondarev,  
P.I. Baryshnikov,  
B.V. Novikov**

### **MONITORING OF INFECTIOUS LARYNGOTRACHEITIS IN WILD BIRDS OF THE STEPPE AREA OF THE ALTAI REGION**

The results of monitoring research of infectious laryngotracheitis in wild migrant birds in the steppe area of the Altai Region are presented.

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УДК 619:639.2:616-056.5:616-07

**A.V. Trebukhov**

### **CHANGES IN FRACTION COMPOSITION OF KETONE BODIES AS A FACTOR OF PREDICTION SUBCLINIC KETOSIS IN COWS**

The studies were carried out in cows of the black-and-white breed in the autumn and spring periods during two years. At a laboratory test ketone bodies and their fractions, glucose and alkaline reserve were considered. It is revealed that the study of fraction composition of ketone bodies in cows' blood during autumn allows to identify cows pre-disposed to subclinic ketosis during winter barnyard period.

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## TECHNOLOGIES AND MEANS OF AGRICULTURE MECHANIZATION

УДК 631.331

**V.S. Krasovskikh,  
A.I. Klishin**

### **SEEDING DEVICES OF SEEDING MACHINERY**

A review of existing seeding devices, of their advantages and drawbacks is given, new proposals on perfection of mechanic vibrating seeding devices of tray type are presented.

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УДК 631.171:636.085/086

I.Y. Fedorenko,  
I.A. Naumov

**METHODOLOGY OF COEFFICIENTS' DETERMINATION  
OF PRESSING FUNDAMENTAL EQUATION**

Methodology and installation to determine coefficients of pressing fundamental equation are discussed. There is presentation of experimental research which resulted in obtaining regression equation to determine compacting pressure depending on the studied materials' properties. The experimental data are illustrated by graphic dependence.

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УДК 633.34:664.0:636.084

G.M. Kharchenko

**ANALYSIS OF CENTRIFUGE PROCESS OF SOYBEAN OIL IN A CONICAL CENTRIFUGE**

Movement of soybean oil on conical surface of centrifuge is studied; that allowed to determine critical rotary speed when the filtered liquid is being removed from the filtering area. The sedimentation conditions of suspended impurities in the rotating conical reservoir are considered.

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**ECONOMICS OF AGRICULTURAL INDUSTRY COMPLEX**

УДК 338.431:631.15/.16

A.I. Kolobova

**THE ISSUE OF GOVERNMENT REGULATION OF AGRICULTURAL ECONOMY**

The analysis of realization of the National Project "Development of Agricultural Industry Complex" by its main directions is carried out, specific proposals on improvement of financial and credit, taxation, price and legal policy, etc. are given.

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УДК 331.56(571.15)

**A.I. Kolobova,  
S.P. Vorobyov****ISSUES OF POPULATION'S EMPLOYMENT IN THE CONDITIONS  
OF AGRICULTURAL REFORMS**

The situation in the labour-market in the rural areas of the Altai Region and its dependence on the results of agrarian reformation, concept of the reforms is analyzed. The interrelation of the problem solution in the field of employment of the population is connected to formation of new economic mechanism in agricultural production sector.

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УДК 631.153.4:338.431

**V.A. Kundius,  
G.A. Podolyak****ISSUES OF MOTIVATION OF AGRICULTURAL EMPLOYEES**

Motivational sphere of one of the agricultural enterprises of the Altai Region is analyzed. The motivation of labour at the enterprise is evaluated stage by stage. The level of motivational sphere is revealed, the basic directions of its improvement are determined.

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УДК 631.145: 330.131.7

**E.A. Novikova****RISK-MANAGEMENTS IN AGRICULTURAL INDUSTRY COMPLEX  
IN THE CONDITIONS OF UNSTABLE ECONOMY**

Any sphere of production carries out its activity in conditions of risk. The agrarian sphere is one of the most risk branches. Risk character of agriculture follows from its nature. The agriculture has the specific features that demand profound knowledge of risks, influencing formation of the economic conditions and achieving the final result. Efficient risk management includes prediction and forecasting possible difficulties and planning of the measures aimed at the prevention and reduction of adverse consequences, instead of late reaction to adverse events. By its nature risk-management is not something absolutely separate from management of other aspects of rural enterprises' activity. Nevertheless, there are some special methods and types of making administrative decisions which are initially directed on reduction of risk in agrarian sphere. The actions directed on reduction of risk which should be carried out by specific agricultural commodity producers, cannot provide risk-free business in agriculture. To operate risk more effectively, alongside with the above-stated actions state support and regulation is also necessary.

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**AGRICULTURAL LABOUR RESOURCES OF THE ALTAI REGION**

Labour is the basic source of a society' wealth and primary factor of creation of the material and spiritual benefits. Labour in agriculture has number of features, reflecting specific character of the industry.

Increase of agricultural production efficiency and the final outcomes of labour directly depend on the skill level of the employees and the extent of labour use.

In the characteristic of labour employment of the population is of importance. In agriculture employment also has specific features. They are related to economic conditions of labour application.

In the Altai Region rural unemployment is currently one of the main problems in the labour market. The rural unemployment is of stagnant character.

To improve quality of labour it is necessary to stabilize the situation in the rural labour market due to unemployment; each region should adopt its own branch program, which can be supervised by regional employment departments.

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