

ТЕОРИЯ И ПРАКТИКА СЕЛЕКЦИИ И СЕМЕНОВОДСТВА СЕЛЬСКОХОЗЯЙСТВЕННЫХ КУЛЬТУР

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К.В. Янситов

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THEORY AND PRACTICE OF BREEDING AND CROPS SEED PRODUCTION

Kononkov P.F., Pivovarov V.F., Gins V.K., Gins M.S.
Results of joint work of All-Russian public organization «The Academy of non traditional and rare plants» and the SSI All-Russian research institute of vegetable breeding and seed production of RAAS from 1994 to 2013 on the introduction of plants

All-Russian research institute of vegetable breeding and seed production of RAAS
E-mail: vniissok@mail.ru

The results of joint work of All-Russian public organization «The Academy of non traditional and rare plants» and the SSI All-Russian research institute of vegetable breeding and seed production of RAAS are presented. The results of two decades of work on the introduction of new, less common and non-traditional plants by scientists from Russia and foreign countries published in fifty volumes of the proceedings of international symposia and conferences and in the collections «The introduction of non-traditional and rare plants and the prospects for their practical use» are reviewed.

Keywords: Academy of non-traditional and rare plants, introduction, selection, alternative plants, amaranth, stachys, yacon, stevia, daikon, International conferences and symposia.

MODERN TRENDS IN SELECTION OF VEGETABLE CROPS

Burenin V.I., Piskunova T.M., Vinogradov Z.S.
The use of genetic resources in breeding of vegetable and melon crops

All-Russian Research Institute of Plant Industry of RAAS by N.I. Vavilov
E-mail: v.burenin@vir.nw.ru

The analysis of the modern homeland assortment of vegetable crops is given. The donors of the most important traits and the accessions of vegetable and melon crops perspective for breeding from the VIR collection are shown. The short characteristic of the varieties is given.

Keywords: vegetable crop, breeding, initial material, donor, variety.

Korotseva I.B., Khimich G.A.

Main trends and challenges in breeding of pumpkin crops
All-Russian Research Institute of vegetable breeding and seed production of RAAS
E-mail: vniissok@mail.ru

The main directions and goals of breeding of cucumber, squash, patty pan squash, and pumpkins are shown. The brief characteristic of the varieties of pumpkin crops developed by in the laboratory breeding and seed production of pumpkin crop of VNISSOK is given.

Keywords: breeding, zucchini, cucumber, pumpkin, squash, variety.

Blinova T.P., Uzun I.V.

Development of functionally sterile, large fruited tomato lines and assessment of their combining ability

SSI «The Transnistrian Agricultural Research Institute»
E-mail: pnish@yandex.ru

The method of development of functionally sterile forms of tomato from hybrids derived from crossing between functionally sterile and fertile lines is described.

The characteristic of two new lines on the main morphological, biological and economically useful traits and combining ability for yield and fruit weight are shown.

Keywords: tomato, hybrid, line, functional male sterility, combining ability.

Kondratieva I.U.

The results of the study of heterosis hybrids of tomato in the open field in non-chernozem zone of Russia

All-Russian Research Institute of vegetable breeding and seed production of RAAS
E-mail: vniissok@mail.ru

Development of F₁ hybrids of tomato for open ground at the moment is one of the main tasks. It can be solved only if there are parent forms with valuable features and properties. As a result of three years of research of tomato hybrid combinations and parental lines in the open field in the non-chernozem zone, the heterosis on major economic traits has been revealed. The character of inheritance of studied traits and the degree of dominance have been determined. The groups of hybrid combinations with high heterosis effect and parental lines that contribute to this effect were identified.

Keywords: tomato, heterosis, line, hybrid, dominance.

SEED GROWING AND SEED STUDYING OF VEGETABLE CROPS

Shabetya O.N.

Features of growing and storage of seed collection of the gene pool of vegetable crops.

Institute of Vegetable and Melon breeding, Ukraine
E-mail: ovoch-lob@online.ua

The features of cultivation and storage of seed collections of the gene pool of vegetable crops have been studied. Elements to improve growing techniques of seeds for dispatch for long term storage are offered. The optimal conditions for storage of vegetable seeds of the gene bank are found. The features of conservation of the collection of vegetative propagated vegetable crops have been analyzed.

Keywords: seeds, vegetables, collections, gene pool, storage and cryopreservation.

Buharov A.F., Baleev D.N.

Temperature stress and thermo dormancy of vegetable seeds of Umbelliferae crops. Features of induction, manifestation and overcome

SSI All-Russian research Institute of vegetable growing of RAAS
E-mail: baleev.dmitry@yandex.ru

The high-temperature stress during 5-20 days has a negative impact on activity of growth of embryo and inhibits the seeds germination of the Umbelliferae crops.

The germination of the studied seeds of different species at low temperature contributes to the recovery of the embryo growth; however, growth is less intensive in comparison with the control. All studied Umbelliferae crops showed the differences in seed germination and development of embryos at various temperatures and duration of heat treatment.

Keywords: seeds, embryo, seed germination, Umbelliferae, thermo dormancy, high-temperature stress, thermo tolerance, thermo sensitive, the temperature coefficient (Q₁₀), the degree of underdevelopment of the embryo (DUE)

Kiselev E.P., Zaikov V.I., Chernishev N.I., Alikina N.S.
Effect of laser treatment for sowing quality of seeds and yield of tomato

SSI Far Eastern Research Institute of Agriculture of RAAS
E-mail: niinhk@kbb.ru

The analysis of some methods of pre-treatment of tomato seeds is given. The results of influence of laser irradiation on seeds germination and vigor are described.

The positive effect of pre-sowing treatment on tomato yield at cultivation in the open ground in condition of the Low Amur was noticed.

Keywords: laser irradiation, tomato seeds, germination energy, germination, yield

Kotsareva N.V.¹, Goncharova N.M.¹, Goncharov N.Y.²
Seed production of squash cv. Yakor in Belgorod region

¹Belgorodskaya State Agricultural Academy by Gorin V.J.
E-mail: nadine151059@rambler.ru

²Peasant farm economy / enterprise «Zorka», Yakovlev district, Belgorod region,

The results of seed production of squash cv. Yakor are given. The agronomic valuable traits, seed productivity and economic efficiency of squash seeds in conditions of peasant farm economy / enterprise were studied.

Keywords: seed production of vegetable crops, seed yield, squash, seed productivity

AGRARIAN SCIENCE IN THE WORLD

Suprunova T.P.

Effective utilization of plant genetic resources in climate change

(Summarizing the results of the European Plant Genetic Resources Conference

«Pre-breeding – fishing in the gene pool»)

All-Russian Research Institute of Vegetable Breeding and Seed Production of RAAS

E-mail: suprunova@gmail.com

The EUACRIA European Plant Genetic Resources Conference «Pre-breeding – fishing in the gene pool» was held at the campus of the Swedish University of Agricultural Science (SLU) in Alnarp from 10 to 13 June 2013. This meeting gathered various members of the gene bank community of practice as well as users of the genetic resources from all around the World.

Keywords: Genetic resources, crop wild relatives, gene banks, climate changes.

AGROTECHNICS OF VEGETABLE PLANTS

Likhatskiy V.I.¹, Cherednichenko V.N.²

Use of growth regulators in broccoli cultivation

¹Uman National University of Horticulture

E-mail: udau@udau.edu.ua

²Vinnitsa National Agrarian University

E-mail: Cherednichenkovolodumur@gmail.com

The results of investigation of the effectiveness of humic and bacterial growth regulators at direct sowing of broccoli in conditions of forest-steppe of Ukraine are given.

Keywords: broccoli, Baikal EM-1, Ivin, potassium humate, Vimpel, Vermisol, variety Lednitskay.

Georgieva O.

Utilization of growth regulator Mitsefit in production of pepper seedlings

Institute of Vegetable Crops «Maritza», Bulgaria

E-mail: olgaizk@abv.bg

The effect of microbial growth regulator Mitsefit on sowing qualities of seeds and biometric parameters of pepper seedlings has been studied. The optimal effective concentration 10 ppm for utilization was determined. This concentration has the maximum positive effect on the germination energy, germination, early seedling growth, the rate of occurrence of phenological stages, and biometric parameters of seedlings. Pre-sowing seed soaking in 10 ppm Mitsefit for 30 minutes increases the vigor of seeds of pepper for 4 – 7.5%, the germination of seeds – for 6.5 – 11%, and accelerates the production of pepper seedlings for 3 days.

Keywords: sweet pepper, seedlings production, growth regulator of microbial origin.

VARIETIES OF VEGETABLE CROPS

Malakhova E.I., Temirbekova S.K., Kulikov I.M., Afanasyeva U.V.
New varieties of cauliflower and headed cabbages

All-Russian breeding and technological institute of horticulture and nursery RAAS

E-mails: vstisp@vstisp.org; sul20@yandex.ru

The new varieties of cauliflower, white and red head cabbages were developed in GNU VSTISP RAAS. The varieties were included in the State register of breeding achievements to 01.01.2013. The patents were received. New varieties have high yield, stable high quality and resistance to biotic and abiotic stress factors.

Keywords: Center of preservation, maintenance and gene pool study, white and red head cabbages, cauliflower, yield, quality, resistance, abiotic, biotic stressors.

PLANT PROTECTION

Filipas A.S., Ulyanenko L.N.

Effectiveness of use of tank-mixture of herbicide and super-wetting agent Silwet Gold in potato plantings

All-Russian Institute of Plant Protection of RAAS

E-mail: filipas@obninsk.ru

Biological and economic efficiency of the tank mixture herbicide Zenkor Techno and wetting agent Silwet Gold in potato cultivation under the Kaluga region was defined. The absence of significant changes in the efficiency by varying herbicide application rates (1.0 or 0.8 kg / ha) and the volume of the working solution (300-200 kg / ha) was noted.

Keywords: Potato, herbicides, Zenkor techno, adjuvant, Silwet Gold, yield.

Ignatov A.N.^{1,2}, Vinogradova S.V.¹, Goloveshkina E.N.¹, Zubareva I.A.¹

Bacterial and viral diseases of crops: distribution and diagnostics

¹Center «Bioengineering» of RAAS

E-mail: an.ignatov@gmail.com

²Russian Peoples' Friendship University

A workshop devoted to «Problems of bacterial and viral plant diseases in agriculture and development of integrated plant protection» was held at April, 24th 2013 at Russian University of People's Friendship.

Keywords: bacterial diseases, plant pathogens diagnostics, plant protection

AGRICULTURAL MANAGEMENT

Petukhova V.V.

Analysis of greenhouse vegetable production in agricultural organizations of Saratov region

Saratov State Agrarian University by Vavilov N.I.

E-mail: oruna@mail.ru

The general tendencies of the market development of vegetable crops of protected ground in the agricultural organizations in the Saratov region over the period of 2005-2011 are described in the article. Parameters of productivity, marketability, profitability, structure of manufacture and structure of a commodity output, expenses of work on 1 sq. m and 1 c production on set of the investigated organizations are calculated. The analysis of a condition and tendencies of development of the vegetable-growing agricultural enterprises is studied with use of the basic indicators of descriptive statistics.

Keywords: the analysis, the market of vegetables, vegetables of the sheltered ground, agricultural organizations, productivity, marketability, profitability

TECHNOLOGIES AND MECHANIZATION OF AGRICULTURE

Pavlov L.V., Akhramenko V.A.

Pneumatic separator and sort results table beet seed with its use

All-Russian Research Institute of vegetable breeding and seed production of RAAS

E-mail: vniissok@mail.ru

The results of the air separator tests on the beet seeds are given.

Keywords: seeds, separation, germination.

MUSHROOM GROWING

Vdovenko S.A.

Commercial yield of oyster mushroom at cultivation in the winter-spring period

Vinnitskii National Agrarian University, Ukraine

E-mail: sloi@ua

The paper presents a commodity output of oyster mushroom growing in the winter and spring time in the basement. The two strains of mushroom, HK-35 and R-24, were grown on the different straw substrates. Using straw pea substrate yielded 1,6-2,2 kg/m² of fruit bodies of the first commodity group of the strain HK-35 and 2,4-2,7 kg/m² of fruit bodies of the second commodity group of the strain P-24.

Keywords: marketability, oyster mushroom, yield, fruit body, straw substrate.

AGROTECHNICS OF VEGETABLE PLANTS

Chernetskiy V.M., Kostyuk O.O., Vlasuk O.A.

Formation of output yield of green beans depending on scheme and density of planting in conditions of steppe of the Ukraine

Vinnitsa National Agrarian University, Ukraine

E-mail: oksanakostuk@yandex.ua

Under the conditions of Steppe of the Ukraine during 2010-2012 a scheme of planting and plant population of beans played a big role on the formation of a yield of green beans variety Ukrainian Sloboda. The highest yield of cv. Ukrainian Sloboda, 13.5 t / ha, was obtained when the density of planting was 148,1 thousand plants/hectare and the scheme of planting was 45x15.

Keywords: scheme of planting, plant population, yield, green beans.