

DRAFT

**MINISTRY OF SCIENCE AND HIGHER EDUCATION
OF THE RUSSIAN FEDERATION**

**NORTH-CAUCASIAN FEDERAL SCIENTIFIC CENTER OF
HORTICULTURE, VITICULTURE, WINEMAKING**

PROGRAM

INTERNATIONAL ONLINE SCIENTIFIC CONFERENCE

**«BIOENGINEERING IN THE ORGANIZATION OF
PROCESSES CONCERNING BREEDING AND
REPRODUCTION OF PERENNIAL CROPS»**

OCTOBER 6-8, 2020

Krasnodar

The issues under consideration of the conference:

The fundamental basis of breeding and improving of horticultural crops and grape varieties

Genetic engineering *in vitro* in breeding, exploration and development of the genetic resources

DNA technology in producing new varieties of permanent crops with specified features and simplified identification of genotypes

Getting healthy planting material of horticultural crops and grape varieties by means of bioengineering

Modern methods of diagnosis and monitoring of phytopathogene and the usage of such methods in problem solution in plant nursery

Biologizing technologies in modern plant nursery

Conference program

6 October:

10⁰⁰-13⁰⁰ – Official opening of the Conference, plenary session

7 October:

10⁰⁰-16⁰⁰ – Section session

16⁰⁰-17⁰⁰ – Summarization and end of the section.

8 October:

10⁰⁰-13⁰⁰ – Brief reports

Limits of the time for speakers:

Plenary session – 15 min.

Section session – 7 min.

Brief reports – 5 min.

PLENARY SESSION

Egorov E. A. (*Academician of the RAS, Dr. Sc. Econ., Professor, Councilor, Chief Research Associate, FSBSI NCFSCHVW, Krasnodar, Russia*). Current state and prospects of development of precision technologies in breeding and nursery of fruit crops.

Kulikov I. M. (*Academician of the RAS, Dr. Sc. Econ., Professor, Director, FSBSI «All-Russian Selection and Technological Institute of Horticulture and Nursery», Moscow, Russia*). Breeding of fruit crops in All-Russian Selection and Technological Institute of Horticulture and Nursery and the role of biotechnology in their development.

Arus P. (*PhD, Researcher in the Genomics & Biotechnology programme, Center for Research in Agricultural Genomics (CRAG), IRTA, UAB Campus – CRAG Building, Barcelona, Spain*). Genomic based approaches in the breeding of fruit crops: an example of *Prunus*.

Burgos P. B. (*PhD, MS Plant Breeding and Genetics, Biotechnology Engineer, Chile, Santiago, Institute of Agricultural Research INIA*). Genetic resources as base for grape breeding in Chile.

Durel Ch. E. (*PhD in biology, France, Angers, INRA Research Center*). Genomic based approaches for development of new apple cultivar: challenges and opportunities.

Vahdati K. (*PhD in Biology, Iran, Tehran University*). New biotechnologies in the fruit and nuts crop breeding and propagation in Iran.

Sedov E. N. (*Academician of the RAS, Dr. Sc. Agr., Professor, Head of Laboratory of Apple Breeding, FSBSI «All-Russian Research Institute of Fruit Crop Breeding», Orel, Russia*). The gene pool of apple as basis for breeding varieties of new generation.

Rupasova Zh. A. (*Corresponding Member of NAS of Belarus, Dr. Sc. Biol., Professor, Head of Laboratory of Chemistry of Plants, Central Botanical Garden of the NAS of Belarus, Minsk, Belarus Republic*). Prospects of applying biochemical methods in integrated assessment perennial crops gene pool.

Mitrofanova I. V. (*Corresponding Member of RAS, Dr. Sc. Biol., Head of Department of Plant Development Biology, Biotechnology and Biosafety of the NBS, Republic of Crimea*). Biotechnological and genomic studies of essential oil plants - a source of biologically active substances.

Savchenko T. V. (*Dr. Sc. Biol., Head of Laboratory of Photosynthetic Water Oxidation, Institute of Fundamental Problems of Biology, Russian Academy of Sciences, Pushchino*). Activation of jasmonate-dependent processes in plants in order to increase stress resistance.

Asadulaev Z. M. (*Dr. Sc. Biol., Director, Mountain Botanical Garden of the Dagestan Federal Research Center of the Russian Academy of Sciences, Makhachkala, Russia*). Gene pool MBG fruit crops and its applying in the solving breeding problems.

Section session

Eremin G. V. (*Academician of the RAS, Dr. Sc. Agr., Professor, Head of Department of Genetic Resources of Fruit Crops and Grapes, Krymsk Experimental Breeding Station Branch of FSBSI Federal Research Center the N.I. Vavilov All-Russian Institute of Plant Genetic Resources, Krymsk*). Genetic collections of donors and sources of valuable traits of stone fruit crops in speeding up the breeding process of domestic varieties.

Yushkov A. N. (*Dr. Sc. Agr., Head of Breeding and Genetic Center of the Federal Scientific Center named after I. V. Michurin*). Features of the water regime of promising decorative varieties and forms of the genus *Malus* Mill.

Zaremuks R. Sh. (*Dr. Sc. Agr., Head of Laboratory of Variety's Study and Breeding of Stone Fruit Cultures, FSBSI NCF SCHVW, Krasnodar*). Fundamental basis of improving varieties of stone fruit crops in the South of Russia.

Savelyeva N. N. (*Dr. Sc. Biol., Leading Researcher, Laboratory of Gene Pool of the Federal Scientific Center named after I. V. Michurin*). Marker-controlled screening of apple tree genotypes with columnar crown habit.

Ulyanovskaya E. V. (*Dr. Sc. Agr., Head of Laboratory of Variety Study and Breeding of Garden Cultures, FSBSI NCF SCHVW, Krasnodar*). Application of the genetic diversity of the genus *Malus* for solving priority areas of breeding.

Suprun I. I. (*Cand. Sc. Biol., Interim Director, FSBSI NCF SCHVW, Krasnodar*). Molecular genetic methods in the study of the gene pool of fruit crops.

Zemisov A. S. (*Cand. Sc. Agr., Head of Laboratory of Private Genetics and Breeding of the Federal Scientific Center named after I. V. Michurin*). The stability of new varieties and forms of apple breeding Federal Scientific Center named after I. V. Michurin on the I component of winter hardiness.

Knyazev S. D. (*Dr. Sc. Agr., Director, FSBSI «All-Russian Research Institute of Fruit Crop Breeding», Orel*). Varieties of fruit and berry crops for development of horticulture in the Central Black Earth zone.

Ajba V. Sh. (*Cand. Sc. Agr., Head of Department of Viticulture and Microvinification, SSI «Institute of Agriculture of the Academy of Sciences of Abkhazia, Sukhumi», Republic of Abkhazia*). Research of genetic polymorphism of native Abkhazian varieties.

Mamadzhanov D. K. (*Cand. Sc. Biol., Head of Laboratory of Nut Farming and Innovative Technologies, Jalal-Abad scientific center of NAS of Kyrgyz Republic, Jalal-Abad, Kyrgyz Republic*). The gene pool of the Kyrgyz walnut and its use for solving breeding problems.

Chivilev V. V. (*Cand. Sc. Agr., Head of Laboratory of Gene Pool of the Federal Scientific Center named after I. V. Michurin*) Influence of the adverse effects of biotic and abiotic factors on the development of new varieties and forms of pear breeding Federal Scientific Center named after I. V. Michurina.

Ilnitskaya E. T. (*Cand. Sc. Biol., Head of Laboratory of Cultivar's Study and Breeding of Grapes, FSBSI NCF SCHVW, Krasnodar*). DNA-marker identification of downy mildew resistance gene donors among seedless grape varieties.

Tokmakov S. V. (*Cand. Sc. Biol., Head of Laboratory of Breeding and Biotechnology, FSBSI NCF SCHVW, Krasnodar*). DNA-fingerprinting and analysis of genetic relationships of pear varieties from the NCF SCHVW collection.

Pankin M. I. (*Dr. Sc. Agr., Leading Research Associate of Laboratory of Reproduction Control in the Ampelocenoses and Ecological Systems, FSBSI NCF SCHVW, Krasnodar*). Genetic polymorphism of wild grapes in the Krasnodar region.

Pikunova A. V. (*Cand. Sc. Biol., Head of Laboratory of Biochemical Genetics, FSBSI «All-Russian Research Institute of Fruit Crop Breeding», Orel*). Screening of new hybrid families of apple for ploidy and scab resistance using DNA marker analysis.

Mozhar N. V. (*Cand. Sc. Agr., Senior Research Associate of Laboratory of Variety's Study and Breeding of Seed Fruit Cultures, FSBSI NCF SCHVW, Krasnodar*). Using the genetic diversity of pear varieties in breeding.

Yanykin D. V. (*Cand. Sc. Biol., Senior Research Associate of Laboratory of Photosynthetic Water Oxidation, Institute of Fundamental Problems of Biology, Russian Academy of Sciences, Pushchino*). Structural and functional features of the corticular photosynthetic apparatus of grapevine chlorenchyma.

Dolya Yu. A. (*Cand. Sc. Agr., Senior Research Associate of Laboratory of Variety's Study and Breeding of Stone Fruit Cultures, FSBSI NCF SCHVW, Krasnodar*). Features of formation of biological productivity of cherry varieties.

Yakovenko V. V. (*Cand. Sc. Agr., Senior Research Associate of Laboratory of Variety's Study and Breeding of Seed Fruit Cultures, FSBSI NCFSCHVW, Krasnodar*). Analysis of biological diversity in the collection of strawberries of the NCFSCHVW by number of economically valuable features.

Artanova M. P. (*Cand. Sc. Agr., Leading Research Associate, FSBSI «North Caucasian scientific research institute of mountain and foothill gardening», Nalchik*). About breeding new varieties of strawberry using cellular technologies.

Satibalov A. V. (*Dr. Sc. Agr., Head of Department of Fruit Growing, FSBSI «North Caucasian scientific research institute of mountain and foothill gardening», Nalchik*). Agroecological aspects of formation of adaptive variety of seed crops in pre-mountain horticulture of the North Caucasus.

Gorina V. M. (*Dr. Sc. Agr., Leading Research Associate of Laboratory of Southern Fruit and Nut Crops, FSBSI «The Order of the Red Banner of Labour Nikita Botanical Gardens - National Scientific Center RAS», Yalta*). Assessment of genetic resources of the genus *Prunus armeniaca* L. in the conditions of Crimea.

Anatov D. M. (*Cand. Sc. Biol., Senior Research Associate of Laboratory of Flora and Plant Resources, Mountain Botanical Garden of the Dagestan Federal Research Center of the Russian Academy of Sciences, Makhachkala*). Some morphological features of fruit and stone of apricot cultivars at different maturation times.

Samarina L. S. (*Cand. Sc. Biol., Senior Research Associate of Biotechnology Department, FSBSI «All-Russian Research Institute of Floriculture and Subtropical Crops», Sochi*). Comparative analysis of gene expression of tea plant *Camellia sinensis* (L) Kuntze in conditions of cold and drought.

Dragavtseva I. A. (*Dr. Sc. Agr., Professor, Chief Research Associate of Laboratory of Reproduction Control in the Fruit Agrocenoses and Ecological Systems, FSBSI NCFSCHVW, Krasnodar*). Selection of highly adaptive varieties and rootstocks as a factor of stabilization of production processes in fruit crops in conditions of increased uncomfortable weather conditions.

Borisova A. A. (*Dr. Sc. Agr., Professor, Head of Department of Coordination of Scientific Research, FSBSI «All-Russian Selection and Technological Institute of Horticulture and Nursery», Moscow*).

Biotechnological criteria for assessing the suitability of planting material of fruit and berry crops for laying field repositories.

Upadyshev M. T. (*Dr. Sc. Agr., Corr. Member of Rus. Acad. of Sci., Head of Laboratory of Virology, FSBSI «All-Russian Selection and Technological Institute of Horticulture and Nursery»*). Modern methods of diagnostics of harmful viruses of fruit and berry crops.

Kuznetsova A. P. (*Cand. Sc. Biol., Head of Laboratory of Nursery Planting, FSBSI NCF SCHVW, Krasnodar*). Studying mechanisms of stone fruit crops resistance to coccomycosis for breeding forms with long-term resistance in time and space.

Levshunov V. A. (*Cand. Sc. Agr., Head of Nursery Planting Department, Republican Scientific and Production Subsidiary Unitary Enterprise «Institute of Fruit Growing», Samohvalovichi, Belarus Republic*). Assessment of perspective rootstocks based on environmental test results.

Vinter M. A. (*Cand. Sc. Agr., Head of Laboratory of Virology, FSBSI NCF SCHVW, Krasnodar*). Propagation stone fruit crops rootstocks of NCF SCHVW breeding in *in vitro* culture.

Malyarovskaya V. I. (*Cand. Sc. Biol., Leading Research Associate of Biotechnology Department, FSBSI «All-Russian Research Institute of Floriculture and Subtropical Crops», Sochi*). Biotechnology techniques for obtaining high quality planting material of *Hydrangea macrophylla*.

Gvasaliya M. V. (*Cand. Sc. Biol., Senior Research Associate of Biotechnology Department, FSBSI «All-Russian Research Institute of Floriculture and Subtropical Crops», Sochi*). Obtaining somaclonal variants in *in vitro* culture *Camellia sinensis*.

Sundyreva M. A. (*Cand. Sc. Agr., Head of Laboratory of Plant Physiology and Biochemistry, FSBSI NCF SCHVW, Krasnodar*). Effect of cell culture medium composition on adaptive properties of grape plants *in vitro*.

Kiseleva G. K. (*Cand. Sc. Biol., Senior Research Associate of Laboratory of Plant Physiology and Biochemistry, FSBSI NCF SCHVW, Krasnodar*). Using physical-biochemical parameters for search conjugate resistance of apple varieties to stress factors.

Mishko A. E. (*Cand. Sc. Biol., Senior Research Associate of Laboratory of Plant Physiology and Biochemistry, FSBSI NCF SCHVW, Krasnodar*). Callus of various grape varieties as a producer of stilbenes.

Malyukova L. S. (*Dr. Sc. Biol., Professor of RAS, Chief Research Associate of Agrochemistry and Soil Science Laboratory, FSBSI «All-*

Russian Research Institute of Floriculture and Subtropical Crops», Sochi).
Methodological aspects of modeling osmotic stress in conditions *in vitro*.

Yurchenko E. G. (*Cand. Sc. Agr., Head of SC «Protection and Biotechnology of Plants», FSBSI NCFSCHVW, Krasnodar*). Biotechnology in improvement of grape seedlings at nursery.

Burmenko J. V. (*Cand. Sc. Biol., Head of the Center for Genetics, Breeding and Introduction of Horticultural Crops, FSBSI «All-Russian Selection and Technological Institute of Horticulture and Nursery», Moscow*). Resistance of plum to grey fruit rot due to morpho-biochemical features of wax plaque and fruit skin.

Brief reports

Atabiev K. M. (*Chief Agronomist-gardener of APC «De-Gousto», RSO-Alania*). Biological potential of productivity of apple varieties of different origin and ploidy in Southern Russia.

Bogdanovich T. V. (*Cand. Sc. Agr., Research Associate of Laboratory of Variety's Study and Breeding of Seed Fruit Cultures, FSBSI NCF SCHVW, Krasnodar*). Donors and sources of economic and biological signs of apple to accelerate the breeding process.

Belenko E. A. (*Junior Research Associate of Laboratory of Variety's Study and Breeding of Seed Fruit Cultures, FSBSI NCF SCHVW, Krasnodar*). Assessment of apple genetic collection using cytological and DNA analysis.

Balapanov I. M. (*Junior Research Associate of Laboratory of Variety's Study and Breeding of Seed Fruit Cultures, FSBSI NCF SCHVW, Krasnodar*). Basics of management of walnut genetic resources to increase efficiency of breeding process in Southern Russia.

Kochubey A. A. (*Junior Research Associate, Post Graduate Student of Laboratory of Variety's Study and Breeding of Stone Fruit Cultures, FSBSI NCF SCHVW, Krasnodar*). Breeding evaluation of plum domestic initial material for creation the new varieties.

Stepanov I. V. (*Junior Research Associate of Laboratory of Breeding and Biotechnology, FSBSI NCF SCHVW, Krasnodar*). Search of effective irap markers for genotyping the species of *P. serrulata*.

Makarkina M. V. (*Junior Research Associate of Laboratory of Cultivar's Study and Breeding of Grapes, FSBSI NCF SCHVW, Krasnodar*). Study of the genetic structure of *Plasmopara viticola* populations in the vineyards of the Krasnodar Region.

Pyata E. G. (*Junior Research Associate of Laboratory of Cultivar's Study and Breeding of Grapes, FSBSI NCF SCHVW, Krasnodar*). The morphology of the manifestation of the seedless trait in various grape varieties under the conditions of the Anapa ampelographic collection in order to highlight the most promising sources of the trait for breeding.

Kotlyar V. K. (*Junior Research Associate of Laboratory of Cultivar's Study and Breeding of Grapes, FSBSI NCF SCHVW, Krasnodar*). Polymorphism of the locus VvAGL11, determining seedlessness in various grape genotypes.

Gorbunov H. B. (*Cand. Sc. Biol., Research Associate, Anapa Zonal Experimental Station of Viticulture and Wine-making –branch of FSBSI*

NCFSCHVW, Anapa). Morpho-biological diversity of wild-growing forms of grapes in the Krasnodar region.

Seghet O. L. (*Cand. Sc. Agr., Research Associate of Laboratory of Reproduction Control in the Ampelocenoses and Ecological Systems, FSBSI NCFSCHVW, Krasnodar*). Morphogenetic potential of NCFSCHVW breeding grape varieties in conditions of *in vitro*.

Kopnina T. A. (*Junior Research Associate, Post graduate Student of Laboratory of Variety's Study and Breeding of Stone Fruit Cultures, FSBSI NCFSCHVW, Krasnodar*). Potential for drought resistance of promising cherry varieties in southern horticulture.

Osmanov R. M. (*Junior Research Associate of Laboratory of Flora and plant resources, Mountain Botanical Garden of the Dagestan Federal Research Center of the Russian Academy of Sciences, Makhachkala*). Dynamics of growth processes of seedlings *Prunus armeniaca* L. in the Dagestan highlands conditions.

Koninskaya N. G. (*Junior Research Associate of Biotechnology Department, FSBSI «All-Russian Research Institute of Floriculture and Subtropical Crops», Sochi*). Control of genetic stability in microclonal reproduction and long-term *in vitro* conservation of some rare and endemic plant species in the North Caucasus.

Fedorovitch S. V. (*Junior Research Associate of Laboratory of Virology, FSBSI NCFSCHVW, Krasnodar*). Receiving of genetically stable rootstock plants of SK-2 seed fruit crops under *in vitro* conditions.

Drygina A. I. (*Junior Research Associate, Post Graduate Student of Laboratory of Nursery Planting, FSBSI NCFSCHVW, Krasnodar*). Identification of influencing regularities of promising rootstocks genotypes, technological modes of application of microbiological preparations for producing quality planting material of genus *Malus* Mill, *Prunus* L.

Astapchuk I. L. (*Cand. Sc. Biol., Research Associate of Laboratory of Biotechnological Control of Phytopathogens and Phytophages, FSBSI NCFSCHVW, Krasnodar*). Specific structure of genus *Fusarium* Link, causes of apple plants root rots in nurseries of Southern Russia.

Kashchits Yu. P. (*Junior Research Associate of Laboratory of Protection and Toxicological Monitoring of Perennial Agroecosystems, FSBSI NCFSCHVW, Krasnodar*). Morphologic-cultural features of anthracous root rot agent of strawberry breed shed and efficiency of fungicides *in vitro*.

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