

Федеральный исследовательский центр Всероссийский институт генетических ресурсов растений имени Н.И. Вавилова  
N.I. Vavilov All-Russian Institute of Plant Genetic Resources

Научные публикации сотрудников ВИР в журналах, индексируемых в базах данных  
«Сеть науки» (WEB of Science) и Scopus. 2020 г. (на 31.03.2021)

- Grigoryev S.V., Illarionova K.V., Shelenga T.V. Hempseeds (*Cannabis* spp.) as a source of functional food ingredients, prebiotics and phytosterols. *Agricultural and Food Science*. 2020;29(5):460-470. DOI: 10.23986/afsci.95620
- Rozanova Irina V., Lashina Nina M., Efimov Vadim M., Afanasenko Olga S., Khlestkina Elena K. The In-Silico Development of DNA Markers for Breeding of Spring Barley Varieties That Are Resistant to Spot Blotch in Russia. *Agriculture*. 2020;10(11):505. DOI: 10.3390/agriculture10110505
- Verzhuk V., Pavlov A., Novikova L.Yu., Filipenko G. Viability of Red (*Ribes rubrum* L.) and Black (*Ribes nigrum* L.) Currant Cuttings in Field Conditions after Cryopreservation in Vapors of Liquid Nitrogen. *Agriculture*. 2020;10(10):476. DOI: 10.3390/agriculture10100476
- Gordeeva E., Shamanin V., Shoeva O., Kukoeva T., Morgounov A., Khlestkina E. The Strategy for Marker-Assisted Breeding of Anthocyanin-Rich Spring Bread Wheat (*Triticum aestivum* L.) Cultivars in Western Siberia. *Agronomy*. 2020;10(10):1603. DOI: 10.3390/agronomy10101603
- Morgounov A., Karaduman Y., Akin B., Aydogan S., Baenziger P.S., Bhatta M., Chudinov V., Dreisigacker S., Govindan V., Guler S., Guzman C., Nehe A., Poudel R., Rose D., Gordeeva E., Shamanin V., Subasi K., Zelenskiy Y., Khlestkina E. Yield and Quality in Purple-Grained Wheat Isogenic Lines. *Agronomy*. 2020;10(1):86. DOI: 10.3390/agronomy10010086
- Nawaz M.A., Lin X., Chan T.-F., Ham J., Shin T.S., Ercisli S., Golokhvast K.S., Lam H.M., Chung G. Korean Wild Soybeans (*Glycine soja* Sieb & Zucc.): Geographic Distribution and Germplasm Conservation. *Agronomy*. 2020;10(2):214. DOI: 10.3390/agronomy10020214
- Novikova L.Yu., Bulakh P.P., Nekrasov A.Yu., Seferova I.V. Soybean Response to Weather and Climate Conditions in the Krasnodar and Primorye Territories of Russia over the Past Decades. *Agronomy*. 2020;10(9):1278. DOI: 10.3390/agronomy10091278
- Novikova L.Yu., Naumova L.G. Dependence of Fresh Grapes and Wine Taste Scores on the Origin of Varieties and Weather Conditions of the Harvest Year in the Northern Zone of Industrial Viticulture in Russia. *Agronomy*. 2020;10(10):1613. DOI: 10.3390/agronomy10101613
- Shelenga T.V., Piskunova T.M., Malyshev L.L., Taipakova A.A., Soloveva A.E. Seed Oil Biochemical Composition of Cultivated *Cucurbita* L. Species from the VIR Collections Grown in the Astrakhan Province of the Russian Federation. *Agronomy*. 2020;10(10):1491. DOI: 10.3390/agronomy10101491
- Kolesnikov L.E., Kremenevskaya M.I., Razumova I.E., Kolesnikova Yu.R., Tambulatova E.V., Yazeva E.O. The biological basis for the use of protein growth stimulant made from cattle split for wheat foliar feeding and disease suppression. *Agronomy Research*. 2020;18(Special Issue 2):1336-1349. DOI: 10.15159/ar.20.082
- Kolesnikov L.E., Novikova I.I., Popova E.V., Priyatkin N.S., Zuev E.V., Kolesnikova Yu.R., Solodyannikov, M.D. The effectiveness of biopreparations in soft wheat cultivation and the quality assessment of the grain by the digital x-ray imaging. *Agronomy Research*. 2020;18(4):2436-2448. DOI: 10.15159/ar.20.206
- Murashev S.V., Kiru S.D., Verzhuk V.G., Pavlov A.V. Potato plant growth acceleration and yield increase after treatment with an amino acid growth stimulant. *Agronomy Research*. 2020;18(2):494-506. DOI: 10.15159/ar.20.036
- Khachumov V.A., Usatov A.V., Azarin K.V., Markin N.V., Gavrilova V.A., Gorbachenko O.F., Gorbachenko F.I. SSR Analysis of the Chloroplast and Mitochondrial Genomes of Cultivar Lines and Wild Types of the Sunflower (*Helianthus* L.). *American Journal of Biochemistry and Biotechnology*. 2020;16(1):70-75. DOI: 10.3844/ajbbbsp.2020.70.75
- Pikula K., Chaika V., Zakharenko A., Golokhvast K., Savelyeva A., Kirsanova I., Anisimova A. Toxicity of Carbon, Silicon, and Metal-Based Nanoparticles to the Hemocytes of Three Marine Bivalves. *Animals*. 2020;10(5):827. DOI: 10.3390/ani10050827
- Fadeev K.A., Smirnov A.S., Zhigalova O.P., Bazhina P.S., Tumialis A.V., Golokhvast K.S. Too Real to Be Virtual: Autonomic and EEG Responses to Extreme Stress Scenarios in Virtual Reality. *Behavioural Neurology*. 2020;2020:5758038. DOI: 10.1155/2020/5758038
- Eremina O., Eremin V., Smirnov R. Genealogical analysis of large-fruited sweet cherry varieties in accordance with the S-locus of parental forms, and the pattern of

**Федеральный исследовательский центр Всероссийский институт генетических ресурсов растений имени Н.И. Вавилова**  
**N.I. Vavilov All-Russian Institute of Plant Genetic Resources**

- inheritance of large-fruited in the presence of S5 and S9 alleles in the genome. *BIO Web of Conferences*. 2020;25:03005. DOI: 10.1051/bioconf/20202503005 [на данный момент т. 25 не включен в БД Web of Science]
- Kovalenko N., Gladkih S. Evaluation of seeds quality in the fruits of cherry varieties (*Cerasus vulgaris* L.) in the process of embryos cultivation *in vitro*. *BIO Web of Conferences*. 2020;25:04002. DOI: 10.1051/bioconf/20202504002 [на данный момент т. 25 не включен в БД Web of Science]
- Novikova Irina I., Popova Elza V., Kolesnikov Leonid E., Priyatkin Nikolay S., Kolesnikova Yulia R. Biological effectiveness of polyfunctional biopreparations in soft wheat cultivation and assessment of crop quality based on NDVI index. *BIO Web of Conferences*. 2020;18:00021. DOI: 10.1051/bioconf/20201800021
- Anisimova I., Radchenko E. The ideas of N.I. Vavilov and current problems of crop genetics. *Biological Communications*. 2020;65(1):3-14. DOI: 10.21638/spbu03.2020.101
- Chukhina I., Shipilina L., Bagmet L., Talovina G., Smekalova T. Results of studying wild relatives of the cultivated plants of Russia. *Biological Communications*. 2020;65(1):41-52. DOI: 10.21638/spbu03.2020.104
- Gavrilova V., Shelenga T., Porokhovina E., Dubovskaya A., Kon'kova N., Grigoryev S., Podolnaya L., Konarev A., Yakusheva T., Kishlyan N., Pavlov A., Brutch N. The diversity of fatty acid composition in traditional and rare oil crops cultivated in Russia. *Biological Communications*. 65(1):68-81. DOI: 10.21638/spbu03.2020.106
- Polonskiy V., Loskutov I., Sumina A. Biological role and health benefits of antioxidant compounds in cereals. *Biological Communications*. 2020;65(1):53-67. DOI: 10.21638/spbu03.2020.105
- Strygina K., Khlestkina E., Podolnaya L. Cotton genome evolution and features of its structural and functional organization. *Biological Communications*. 2020;65(1):15-27. DOI: 10.21638/spbu03.2020.102
- Vishnyakova M. The Vavilov Institute's (VIR) contribution to the survey and study of *Vavilovia formosa* (Fabaceae). *Biological Communications*. 2020;65(1):28-40. DOI: 10.21638/spbu03.2020.103
- Taratuhin O.D., Novikova L.Yu., Seferova I.V., Gerasimova T.V., Nuzhdin S.V., Samsonova M.G., Kozlov K.N. An Artificial Neural Network Model for Prediction of Phenology of Early Maturing Soybean Varieties in Relation to Climate Factors. *Biophysics*. 2020;65(1):106-117. DOI: 10.1134/S0006350920010200
- Arkhimandritova S., Shavarda A., Potokina E. Key metabolites associated with the onset of flowering of guar genotypes (*Cyamopsis tetragonoloba* (L.) Taub). *BMC Plant Biology*. 2020;20(Suppl 1):291. DOI: 10.1186/s12870-020-02498-x
- Gerasimova S.V., Hertig Ch., Korotkova A.M., Kolosovskaya E.V., Otto I., Hiekel S., Kochetov A.V., Khlestkina E.K., Kumlehn J. Conversion of hulled into naked barley by Cas endonuclease-mediated knockout of the *NUD* gene. *BMC Plant Biology*. 2020;20(Suppl 1):255. DOI: 10.1186/s12870-020-02454-9
- Kochetov A.V., Egorova A.A., Glagoleva A.Y., Strygina K.V., Khlestkina E.K., Gerasimova S.V., Shatskaya N.V., Vasilyev G.V., Afonnikov D.A., Shmakov N.A., Antonova O.Y., Alpatyeva N.V., Khiutti A., Afanasenko O.S., Gavrilenko T.A. The mechanism of potato resistance to *Globodera rostochiensis*: comparison of root transcriptomes of resistant and susceptible *Solanum phureja* genotypes. *BMC Plant Biology*. 2020;20(Suppl 1):350. DOI: 10.1186/s12870-020-02334-2
- Sokolkova A., Burlyaeva M., Valiannikova T., Vishnyakova M., Schafleitner R., Lee C.R., Ting C.T., Nair R.M., Nuzhdin S., Samsonova M., von Wettberg E. Genome-wide association study in accessions of the mini-core collection of mungbean (*Vigna radiata*) from the World Vegetable Gene Bank (Taiwan). *BMC Plant Biology*. 2020;20(Suppl 1):363. DOI: 10.1186/s12870-020-02579-x
- Astamirova M.A., Taysumov M.A., Bagmet L.V., Umarov M.U., Magomadova R.S., Abdurzakova A.S. On the Genesis of the Alpine Flora of North Caucasus. *Botanicheskii zhurnal*. 2020;105(1):32-45. DOI: 10.31857/S0006813620010032
- Rodionov A.V., Shneyer V.S., Gnutikov A.A., Nosov N.N., Punina E.O., Zhurbenko P.M., Loskutov I.G., Muravenko O.V. Species dialectics: from initial uniformity, through the greatest possible diversity to ultimate uniformity. *Botanicheskii zhurnal*. 2020;105(9):835-853. DOI: 10.31857/S0006813620070091
- Bityutskii N.P., Loskutov I., Yakkonen K., Konarev A., Shelenga T., Khoreva V., Blinova E., Ryumin, A. Screening of *Avena sativa* cultivars for iron, zinc,

**Федеральный исследовательский центр Всероссийский институт генетических ресурсов растений имени Н.И. Вавилова**  
**N.I. Vavilov All-Russian Institute of Plant Genetic Resources**

manganese, protein and oil content and fatty acid composition in whole grains. *Cereal Research Communications*. 2020;48(1):87-94. DOI: 10.1007/s42976-019-00002-2

Pikula K., Zakharenko A., Chaika V., Kirichenko K., Tsatsakis A., Golokhvast K. Risk assessments in nanotoxicology: bioinformatics and computational approaches. *Current Opinion in Toxicology*. 2020;19:1-6. DOI: 10.1016/j.cotox.2019.08.006

Illarionova K., Grigoryev S. Micromycetes-resistant colored cotton is promising material to reduce mycotoxins amounts in textiles. *E3S Web of Conferences*. 2020;164:06015. DOI: 10.1051/e3sconf/202016406015

Akhmetshina A.O., Strygina K.V., Khlestkina E.K., Porokhovinova E.A., Brutch N.B. High-throughput sequencing techniques to flax genetics and breeding. *Ecological genetics*. 2020;18(1):103-124. DOI: 10.17816/ecogen16126

Bobkov S.V., Bychkov I.A., Selikhova T.N., Semenova E.V., Vishnyakova M.A. Analysis of introgressive lines of inter-species pea hybrids by band composition of seed proteins. *Ecological genetics*. 2020;18(1):79-88. DOI: 10.17816/ecogen16099

Dyachenko E.A., Semenova E.V., Kochieva E.Z. Characterization of variability of the intergenic spacers cpDNA trnH-psbA, trnY-trnT AND rpoB-trnC in representatives of *Pisum* L. (Tribe Fabeae). *Ecological genetics*. 2020;18(4):445-456. DOI: 10.17816/ecogen33959

Krylova E.A., Khlestkina E.K., Burlyaeva M.O., Vishnyakova M.A. Determinate growth habit of grain legumes: role in domestication and selection, genetic control. *Ecological genetics*. 2020;18(1):43-58. DOI: 10.17816/ecogen16141

Loskutov I.G., Novikova L.Y., Kovaleva O.N., Ivanova N.N., Blinova E.V., Belskaya G.V. Ecological-geographic approaches to the study of genetic diversity of barley and oat from the VIR collection. *Ecological genetics*. 2020;18(1):89-102. DOI: 10.17816/ecogen16128

Loskutov I.G., Shelenga T.V., Konarev A.V., Vargach Y.I., Porokhovinova E.A., Blinova E.V., Gnutikov A.A., Rodionov A.V. Modern approach of structuring the variety diversity of the naked and covered forms of cultural oats (*Avena sativa* L.). *Ecological genetics*. 2020;18(1):27-41. DOI: 10.17816/ecogen12977

Radchenko E.E., Abdullaev R.A., Anisimova I.N. Genetic diversity of cereal crops for powdery mildew resistance. *Ecological genetics*. 2020;18(1):59-78. DOI: 10.17816/ecogen14530

Vishnyakova M.A. G.D. Karpechenko - an outstanding geneticist, "sunny man", legendary fellow-compatriot. *Ecological genetics*. 2020;18(1):11-20. DOI: 10.17816/ecogen18969

Panichev A.M., Trepets S.A., Chekryzhov I.Yu., Seryodkin I.V., Vakh E.A., Makarevich R.A., Eskina T.G., Bibina K.V., Stolyarova T.A., Mitina E.I., Ivanov V.V., Ostapenko D.S., Kholodov A.S., Golokhvast K.S. A study of kudurs used by wild animals located on the water sources high in REE content in the Caucasus Nature Reserve. *Environmental Geochemistry and Health*. 2020;43(1):91-112. DOI: 10.1007/s10653-020-00670-8

Pikula K., Mintcheva N., Kulinich S., Zakharenko A., Markina Z., Chaika V., Orlova T., Mezhuiev Y., Kokkinakis E., Tsatsakis A., Golokhvast K. Aquatic toxicity and mode of action of CdS and ZnS nanoparticles in four microalgae species. *Environmental Research*. 2020;186:109513. DOI: 10.1016/j.envres.2020.109513

Lavrent'yeva S.I., Chernyshuk D.K., Martinenko N.V., Ivachenko L.E., Arsene A.L., Ercisli S., Tsatsakis A.M., Golokhvast K.S., Nawaz M.A. Biochemical adaptation of wild and cultivated soybean against toxicity of lead salts. *Environmental Toxicology and Pharmacology*. 2020;79:103429. DOI: 10.1016/j.etap.2020.103429

Truskinov E.V. The question of inheritance of acquired characteristics in the light of the new knowledge in epigenetics. *Filosofskii zhurnal*. 2020;13(1):110-117. DOI: 10.21146/2072-0726-2020-13-1-110-117

Glagoleva A.Y., Shoeva O.Y., Khlestkina E.K. Melanin Pigment in Plants: Current Knowledge and Future Perspectives. *Frontiers in Plant Science*. 2020;11:770. DOI: 10.3389/fpls.2020.00770

Solberg S.Ø., Yndgaard F., Andreassen C., von Bothmer R., Loskutov I.G., Asdal Å. Long-Term Storage and Longevity of Orthodox Seeds: A Systematic Review. *Frontiers in Plant Science*. 2020;11:1007. DOI: 10.3389/fpls.2020.01007

**Федеральный исследовательский центр Всероссийский институт генетических ресурсов растений имени Н.И. Вавилова**  
**N.I. Vavilov All-Russian Institute of Plant Genetic Resources**

- Olatoye M.O., Clark L.V., Labonte N.R., Dong H., Dwiyantri M.S., Anzoua K.G., Brummer J.E., Ghimire B.K., Dzyubenko E.A., Dzyubenko N.I., Bagmet L.V., Sabitov A.Sh., Chebukin P.A., Głowacka K., Heo K., Jin X., Nagano H., Peng Ju., Yu Ch.Y., Yoo Ji.H., Zhao H., Long S.P., Yamada T., Sacks E.J., Lipka A.E. Training Population Optimization for Genomic Selection in *Miscanthus*. *G3-Genes, Genomes, Genetics*. 2020;10(7):2465-2476. DOI: 10.1534/g3.120.401402
- Babar U., Nawaz M.A., Arshad U., Azhar M.T., Atif R.M., Golokhvast K.S., Tsatsakis A.M., Shcherbakova K., Chung G., Rana I.A. Transgenic crops for the agricultural improvement in Pakistan: a perspective of environmental stresses and the current status of genetically modified crops. *GM Crops & Food: Biotechnology in Agriculture and the Food Chain*. 2020;11(1):1-29. DOI: 10.1080/21645698.2019.1680078
- Makarenko M., Usatov A., Tatarinova T., Azarin K., Kovalevich A., Gavrilova V., Horn R. The Investigation of Perennial Sunflower Species (*Helianthus* L.) Mitochondrial Genomes. *Genes*. 2020;11(9):982. DOI: 10.3390/genes11090982
- Kozlova A.P., Muntyan V.S., Dzyubenko E.A., Afonin A.M., Roumiantseva M.L. New recombinant form of rhizophage 16-3 from soil of Caucasus. *Genes and Cells*. 2020;15(S3):138-139. [на данный момент Приложение S3 не включено в БД Scopus]
- Loskutov I.G. Vavilov institute (VIR): historical aspects of international cooperation for plant genetic resources. *Genetic Resources and Crop Evolution*. 2020; T. 67(8):2237-2253. DOI: 10.1007/s10722-020-00979-4
- Pikula K., Zakharenko A., Stratidakis A., Razgonova M., Nosyrev A., Mezhuev Y., Tsatsakis A., Golokhvast K. The advances and limitations in biodiesel production: feedstocks, oil extraction methods, production, and environmental life cycle assessment. *Green Chemistry Letters and Reviews*. 2020;13(4):11-30. DOI: 10.1080/17518253.2020.1829099
- Kholodov A., Zakharenko A., Drozd V., Chernyshev V., Kirichenko K., Seryodkin I., Karabtsov A., Olesik S., Khvost E., Vakhnyuk I., Chaika V., Stratidakis A., Vinceti M., Sarigiannis D., Hayes A.W., Tsatsakis A., Golokhvast K. Identification of cement in atmospheric particulate matter using the hybrid method of laser diffraction analysis and Raman spectroscopy. *Heliyon*. 2020;6(2):e03299. DOI: 10.1016/j.heliyon.2020.e03299
- Khlestkina E.K., Chukhina I.G. Genetic Resources of Plants: The Conservation and Use Strategy in the 21st Century. *Herald of the Russian Academy of Sciences*. 2020;90(3):298-302. DOI: 10.1134/S1019331620030089
- Dymnikova N.S., Erohina E.V., Moryganov A.P., Grigorev S.V., Kuznetsov, O.Y. Optimization of Conditions for Synthesis of Ultrafine Silver Particles in Hemp Fiber Extract. *Inorganic Materials: Applied Research*. 2020;11(2):385-393. DOI: 10.1134/S2075113320020082
- Sokolkova A., Bulyntsev S.V., Chang P.L., Carrasquilla-Garcia N., Igolkina A.A., Noujdina N.V., von Wettberg E, Vishnyakova M.A., Cook D.R., Nuzhdin S.V., Samsonova M.G. Genomic Analysis of Vavilov's Historic Chickpea Landraces Reveals Footprints of Environmental and Human Selection. *International Journal of Molecular Sciences*. 2020;21(11):3952. DOI: 10.3390/ijms21113952
- Illarionova K., Grigoryev S., Shelenga T., Rantakaulio T. Metabolomics approach in digital assessment of fatty acids profile of cottonseed for biological activity improvement of cotton oil. *IOP Conference Series: Materials Science and Engineering*. 2020;940(1):012077. DOI: 10.1088/1757-899X/940/1/012077
- Brutch N., Matvienko I., Porokhvinova E., Pavlov A., Nozkova J., Koshkin V. Effect of Photoperiod on *Linum usitatissimum* L. Characters. *Journal of Natural Fibers*. 2020;17(9):1345-1354. DOI: 10.1080/15440478.2019.1568345
- Zverev A.O., Pershina E.V., Shapkin V.M., Kichko A.K., Mitrofanova O.P., Kobylanskii V.D., Yuzikhin O.S., Belimov A.A., Andronov E.E. Molecular Analysis of the Rhizosphere Microbial Communities from Gramineous Plants Grown on Contrasting Soils. *Microbiology*. 2020;89(2):231-241. DOI: 10.1134/S002626172001018X
- Amosova A.V., Samatadze T.E., Mozhova G.V., Kipen V.N., Dubovskaya A.G., Artemyeva A.M., Yurkevich O.Yu., Zoshchuk S.A., Lemesh V.A., Muravenko O.V. Genomic Markers Associated with Cold-Hardiness in *Brassica rapa* L. *Molecular Biology*. 2020;54(4):541-552. DOI: 10.1134/S0026893320040032
- Razgonova M.P., Zakharenko A.M., Golokhvast K.S., Thanasoula M., Sarandi E., Nikolouzakakis K., Fragkiadaki P., Tsoukalas D., Spandidos D.A., Tsatsakis A. Telomerase and telomeres in aging theory and chronographic aging theory (Review). *Molecular Medicine Reports*. 2020;22(3):1679-1694.



Федеральный исследовательский центр Всероссийский институт генетических ресурсов растений имени Н.И. Вавилова  
N.I. Vavilov All-Russian Institute of Plant Genetic Resources

DOI: 10.3892/mmr.2020.11274

Perchuk I.N., Shelenga T.V., Gurkina M.V., Miroshnichenko E.V., Burlyayeva M.O. Composition of Primary and Secondary Metabolite Compounds in Seeds and Pods of Asparagus Bean (*Vigna unguiculata* (L.) Walp.) from China. *Molecules*. 2020;25(17):3778. DOI: 10.3390/molecules25173778

Razgonova M., Zakharenko A., Ercisli S., Grudev V., Golokhvast K. Comparative Analysis of Far East Sikhotinsky Rhododendron (*Rh. sichotense*) and East Siberian Rhododendron (*Rh. adamsii*) Using Supercritical CO<sub>2</sub>-Extraction and HPLC-ESI-MS/MS Spectrometry. *Molecules*. 2020;25(17):3774. DOI: 10.3390/molecules25173774

Razgonova M., Zakharenko A., Pikula K., Kim E., Chernyshev V., Ercisli S., Cravotto G., Golokhvast K. Rapid Mass Spectrometric Study of a Supercritical CO<sub>2</sub>-extract from Woody Liana *Schisandra chinensis* by HPLC-SPD-ESI-MS/MS. *Molecules*. 2020;25(11):2689. DOI: 10.3390/molecules25112689

Razgonova M., Zakharenko A., Shin T.-S., Chung G., Golokhvast K. Supercritical CO<sub>2</sub> Extraction and Identification of Ginsenosides in Russian and North Korean Ginseng by HPLC with Tandem Mass Spectrometry. *Molecules*. 2020;25(6):1407. DOI: 10.3390/molecules25061407

Tikhonova M.A., Tikhonova N.G., Tenditnik M.V., Ovsyukova M.V., Akopyan A.A., Dubrovina N.I., Amstislavskaya T.G., Khlestkina E.K. Effects of Grape Polyphenols on the Life Span and Neuroinflammatory Alterations Related to Neurodegenerative Parkinson Disease-Like Disturbances in Mice. *Molecules*. 2020;25(22):5339. DOI: 10.3390/molecules25225339

Zakharenko A., Romanchenko D., Thinh P.D., Pikula K., Thuy Hang, C.T., Yuan W., Xia X., Chaika V., Chernyshev V., Zakharenko S., Razgonova M., Chung G., Golokhvast K. Features and Advantages of Supercritical CO<sub>2</sub> Extraction of Sea Cucumber *Cucumaria frondosa japonica* Semper, 1868. *Molecules*. 2020;25(18):4088. DOI: 10.3390/molecules25184088

Amosova A.V., Samatadze T.E., Mozgova G.V., Kipen V.N., Dubovskaya A.G., Artemyeva A.M., Yurkevich O.Y., Zoshchuk S.A., Lemesh V.A., Muravenko O.V. Genomic Markers Associated with Cold-Hardiness in *Brassica rapa* L. *Molekuliarnaia biologiya*. 2020;54(4):603-615. DOI: 10.31857/S0026898420040035

Pikula K., Chaika V., Zakharenko A., Markina Z., Vedyagin A., Kuznetsov V., Gusev A., Park, S.; Golokhvast, K. Comparison of the Level and Mechanisms of Toxicity of Carbon Nanotubes, Carbon Nanofibers, and Silicon Nanotubes in Bioassay with Four Marine Microalgae. *Nanomaterials*. 2020;10(3):485. DOI: 10.3390/nano10030485

Pikula K., Zakharenko A., Chaika V., Em I., Nikitina A., Avtomonov E., Tregubenko A., Agoshkov A., Mishakov I., Kuznetsov V., Gusev A., Park S., Golokhvast K. Toxicity of Carbon, Silicon, and Metal-Based Nanoparticles to Sea Urchin *Strongylocentrotus intermedius*. *Nanomaterials*. 2020;10(9):1825. DOI: <https://doi.org/10.3390/nano10091825>

Zinchenko Y.P., Khoroshikh P.P., Sergievich A.A., Smirnov A.S., Tumyalis A.V., Kovalev A.I., Gutnikov S.A., Golokhvast K.S. Virtual reality is more efficient in learning human heart anatomy especially for subjects with low baseline knowledge. *New Ideas in Psychology*. 2020;59:100786. DOI: 10.1016/j.newideapsych.2020.100786

Tikhonova M.A., Shoeva O.Yu., Tenditnik M.V., Ovsyukova M.V., Akopyan A.A., Dubrovina N.I., Amstislavskaya T.G., Khlestkina E.K. Mesenchymal stem cells enhance  $\alpha$ -synuclein clearance via M2 microglia polarization in experimental and human parkinsonian disorder. *Nutrients*. 2020;12(12):3877. DOI: 10.3390/nu12123877

Terzic S., Boniface M.-C., Marek L., Alvarez D., Baumann K., Gavrilova V., Joita-Pacureanu M., Sujatha M., Valkova D., Velasco L., Hulke B.S., Jovic S., Langlade N., Munos S., Rieseberg L., Seiler G., Vear F. Gene banks for wild and cultivated sunflower genetic resources star. *OCL-Oilseeds and Fats Crops and Lipids*. 2020;27:9. DOI: 10.1051/ocl/2020004

Markin N.V., Usatov A.V., Grinko A.V., Kan K.F., Gavrilova V.A. SSR Analysis of Nuclear DNA of Annual and Perennial Sunflower Species (*Helianthus* L.). *OnLine Journal of Biological Sciences*. 2020;20(2):77-83. DOI: 10.3844/ojbsci.2020.77.83

Khlestkin V.K., Erst T.V., Rozanova I.V., Efimov V.M., Khlestkina E.K. Genetic Loci Determining Potato Starch Yield and Granule Morphology Revealed by

Федеральный исследовательский центр Всероссийский институт генетических ресурсов растений имени Н.И. Вавилова  
N.I. Vavilov All-Russian Institute of Plant Genetic Resources

- Genome-Wide Association Study (GWAS). *PeerJ*. 2020;8:e10286. DOI:10.7717/peerj.10286
- Voitsekhovskaja O.V., Apollonov V.I., Murtuzova A.V., Rabadanova C.K., Charnysh, M.A., Drozdova I.V., Belyaeva A.I., Kovaleva O.N., Loskutov I.G., Pawlowski K., Demidchik V.V., Tyutereva E.V. Photosynthetic activity as assessed *via* chlorophyll a fluorescence suggests a role of potassium channels in root to shoot signaling. *Photosynthetica*. 2020;58 (SI):608-621. DOI: 10.32615/ps.2020.025
- Gnutikov A.A., Nosov N.N., Punina E.O., Probatova N.S., Rodionov A.V. On the placement of *Coleanthus subtilis* and the subtribe *Coleanthinae* within Poaceae by new molecular phylogenetic data. *Phytotaxa*. 2020;468(3):243-274. DOI: 10.11646/phytotaxa.468.3.2
- Novakazi F., Afanasenko O., Lashina N., Platz G.J., Snowdon R., Loskutov I., Ordon F. Genome-wide association studies in a barley (*Hordeum vulgare*) diversity set reveal a limited number of loci for resistance to spot blotch (*Bipolaris sorokiniana*). *Plant Breeding*, 2020;139(3):521-535. DOI: 10.1111/pbr.12792
- Bazhenov M.S., Chernook A.G., Goncharov N.P., Chikida N.N., Belousova M.Kh., Karlov G.I., Divashuk M.G. The Allelic Diversity of the Gibberellin Signaling Pathway Genes in *Aegilops tauschii* Coss. *Plants*. 2020;9(12):1696. DOI: 10.3390/plants9121696
- Nawaz M.A., Azeem F., Zakharenko A.M., Lin X., Atif R.M., Baloch F.S., Chan T.F., Chung G., Ham J., Sun S., Golokhvast K.S. In-silico Exploration of Channel Type and Efflux Silicon Transporters and Silicification Proteins in 80 Sequenced Viridiplantae Genomes. *Plants*. 2020;9(11):1612. DOI: 10.3390/plants9111612
- Palmé A.E., Hagenblad J., Solberg S.Ø., Aloisi K., Artemyeva A. SNP Markers and Evaluation of Duplicate Holdings of Brassica oleracea in Two European Genebanks. *Plants*. 2020. 9(8):925(1-18). DOI: 10.3390/plants9080925
- Rodionov A.V., Gnutikov A.A., Nosov N.N., Machs E.M., Mikhaylova Yu.V., Shneyer V.S., Punina E.O. Intragenomic Polymorphism of the ITS 1 Region of 35S rRNA Gene in the Group of Grasses with Two-Chromosome Species: Different Genome Composition in Closely Related *Zingeria* Species. *Plants*. 2020;9(11):1647. DOI: 10.3390/plants9121647
- Shumilina D., Kornukhin D., Domblides E., Soldatenko A., Artemyeva A. Effects of Genotype and Culture Conditions on Microspore Embryogenesis and Plant Regeneration in *Brassica Rapa* ssp. *Rapa* L. *Plants*. 2020;9(2):278. DOI: 10.3390/plants9020278
- Ku J.-C., Ronceret A., Golubovskaya I., Lee D.H., Wang C., Timofejeva L., Kao Y.-H., Gomez Angoa A.K., Kremling K., Williams-Carrier R., Meeley R., Barkan A., Cande W.Z., Wang C.-J.R. Dynamic localization of SPO11-1 and conformational changes of meiotic axial elements during recombination initiation of maize meiosis. *PLoS Genetics*. 2020;16(4):e1007881. DOI: 10.1371/journal.pgen.1007881
- Kroupin P.Yu., Chernook A.G., Bazhenov M.S., Karlov G.I., Goncharov N.P., Chikida N.N., Divashuk M.G. Allele mining of *TaGRF-2D* gene 5'-UTR in *Triticum aestivum* and *Aegilops tauschii* genotypes. *PLoS ONE*. 2020;15(4):e0231704. DOI: 10.1371/journal.pone.0231704
- Muntyan V.S., Kozlova A.P., Afonin A.M., Muntyan A.N., Dzyubenko E.A., Kabilov M.R., Antonova E.V., Roumiant M.L. Comparative Genomic Analysis of Moderate Bacteriophages of Alfalfa Root Nodule Bacteria. In: 2020 Cognitive Sciences, Genomics and Bioinformatics (CSGB), Novosibirsk; Russian Federation; 6 July 2020 до 10 July 2020. Novosibirsk, 2020. p. 72-75 (номер статьи 9214723). DOI: 10.1109/CSGB51356.2020.9214723
- Loskutov I.G., Shelenga T.V., Rodionov A.V., Khoreva V.I., Blinova E.V., Konarev A.V., Gnutikov A.A., Konarev A.V. Application of Metabolomic Analysis in Exploration of Plant Genetic Resources. *Proceedings of the Latvian Academy of Sciences, Section B: Natural, Exact, and Applied Sciences*. 2019;73(6):494-501. DOI: 10.2478/prolas-2019-0076 [БД Scopus 2020]
- Smekalova T.N., Lebedeva N.V., Novikova L.Yu. Morphological Analysis of Jerusalem Artichoke (*Helianthus tuberosus* L.) Accessions of Different Origin from VIR Collection. *Proceedings of the Latvian Academy of Sciences, Section B: Natural, Exact, and Applied Sciences*. 2019;73(6):502-512. DOI: 10.2478/prolas-2019-0077 [БД Scopus 2020]
- Zoteyeva N., Sprüde G., Klimenko N., Mežaka I. Identification of Interspecific Potato Hybrids with Combined Resistance to Late Blight (*Phytophthora Infestans*) and Nematode (*Globodera Rostochiensis*). *Proceedings of the Latvian Academy of Sciences. Section B. Natural, Exact, and Applied Sciences*. 2020;74(3):188-195. DOI: 10.2478/prolas-2020-0030

**Федеральный исследовательский центр Всероссийский институт генетических ресурсов растений имени Н.И. Вавилова**  
**N.I. Vavilov All-Russian Institute of Plant Genetic Resources**

Abdullaev R.A., Batasheva B.A., Alpatieva N.V., Chumakov M.A., Radchenko E.E., Kovaleva O.N., Yakovleva O.V. Resistance of barley cultivars approved for use in Russia to harmful organisms and toxic aluminum ions. *Proceedings on applied botany, genetics and breeding*. 2020;181(3):120-127. DOI: 10.30901/2227-8834-2020-3-120-127

Anisimova I.N., Dubovskaya A.G. CMS systems in rapeseed and their use in the breeding of domestic hybrids. *Proceedings on applied botany, genetics and breeding*. 2020;181(3):171-180. DOI: 10.30901/2227-8834-2020-3-171-180

Aniskov N.I., Safonova I.V. Comparative assessment of plasticity, stability and homeostasis based on '1000 grain weight' in winter rye cultivars developed at VIR. *Proceedings on applied botany, genetics and breeding*. 2020;181(3):56-63. DOI: 10.30901/2227-8834-2020-3-56-63

Barsukova O.N. Niedzwetzky's apple (*Malus niedzwetzkyana* Dieck): evaluation and breeding prospects. *Proceedings on applied botany, genetics and breeding*. 2020;181(3):64-69. DOI: 10.30901/2227-8834-2020-3-64-69

Bekish L.P., Uspenskaja V.A., Peneva T.I., Chikida N.N. Biomorphological and useful agronomic traits of the hexaploid winter triticale cultivar 'Bilinda' approved for cultivation in the Northwestern Region of the Russian Federation. *Proceedings on applied botany, genetics and breeding*. 2020;181(4):102-111. DOI: 10.30901/2227-8834-2020-4-102-111

Bespalova E.S., Agakhanov M.M., Arkhimandritova S.B., Erastenkova M.V., Uhatova Yu.V. Sanitization of potato varieties from the VIR collection against viruses. *Proceedings on applied botany, genetics and breeding*. 2020;181(4):164-172. DOI: 10.30901/2227-8834-2020-4-164-172

Eremin G.V. The role of *Prunus cerasifera* Ehrh. in the origin, evolution and improvement of stone fruit cultivars. *Proceedings on applied botany, genetics and breeding*. 2020;181(4):136-143. DOI: 10.30901/2227-8834-2020-4-136-143

Fadeeva I.D., Gazizov I.N., Khakimov A.G., Mitrofanova O.P. Source material for breeding winter bread wheat in the north of the Middle Volga region. *Proceedings on applied botany, genetics and breeding*. 2020;181(4):71-82. DOI: 10.30901/2227-8834-2020-4-71-82

Fateev D.A., Artemyeva A.M. Molecular genetic characteristics of broccoli (*Brassica oleracea* L. var. *italica* Plenck) from the VIR collection. *Proceedings on applied botany, genetics and breeding*. 2020;181(3):91-99. DOI: 10.30901/2227-8834-2020-3-91-99

Gavrilova O.P., Gagkaeva T.Yu., Orina A.S., Markova A.S., Kabashov A.D., Loskutov I.G. Mycobiota in Mycobiota in the grain of the oat breeding lines produced in 2019 in competitive variety trials on the fields of Nemchinovka Federal Research Center, Moscow Province. *Proceedings on applied botany, genetics and breeding*. 2020;181(2):134-144. DOI: 10.30901/2227-8834-2020-2-134-144

Gonikova M.R., Khoreva V.I., Goldshtein V.G., Nosovskaya L.P., Adikaeva L.V., Khatefov E.B. Study of economically valuable traits and technological properties in maize from the *Zea mays* L. collection of VIR. *Proceedings on applied botany, genetics and breeding*. 2020;181(4):56-64. DOI: 10.30901/2227-8834-2020-4-56-64

Govor Y.M., Khatefov E.B. Ranking the VIR collection of maize (*Zea mays* L.) according to the traits valuable for breeding in the soil and climate environments of the Republic of Belarus. *Proceedings on applied botany, genetics and breeding*. 2020;181(2):28-34. DOI: 10.30901/2227-8834-2020-2-28-34

Kabashov A.D., Loskutov I.G., Vlasenko N.M., Leibovich Y.G., Markova A.S., Filonenko Z.V., Razumovskaya L.G. Oat cultivars developed at Nemchinovka and included into the State Register in recent years (a review). *Proceedings on applied botany, genetics and breeding*. 2020;181(1):110-118. DOI: 10.30901/2227-8834-2020-1-110-118

Kishlyan N.V., Bemova V.D., Matveeva T.V., Gavrilova V.A. Biological peculiarities and cultivation of groundnut (a review). *Proceedings on applied botany, genetics and breeding*. 2020;181(1):119-127. DOI: 10.30901/2227-8834-2020-1-119-127

Kishlyan N.V., Melnikova N.V., Rozhmina T.A. The mechanisms of fiber flax adaptation to high soil acidity (a review). *Proceedings on applied botany, genetics and breeding*. 2020;181(4):205-212. DOI: 10.30901/2227-8834-2020-4-205-212

**Федеральный исследовательский центр Всероссийский институт генетических ресурсов растений имени Н.И. Вавилова**  
**N.I. Vavilov All-Russian Institute of Plant Genetic Resources**

- Kolesova M.A., Chikida N.N., Belousova M.K., Tyryshkin L.G. Effective resistance to powdery mildew in *Aegilops* L. accessions. *Proceedings on applied botany, genetics and breeding*. 2020;181(3):135-140. DOI: 10.30901/2227-8834-2020-3-135-140
- Konovalova G.S., Radchenko E.E. Donors of effective genes for scald resistance in barley. *Proceedings on applied botany, genetics and breeding*. 2020;181(3):141-145. DOI: 10.30901/2227-8834-2020-3-141-145
- Kostina L.I., Kosareva O.S., Truskinov E.V., Kirpicheva T.V. The collection of potato varieties as a reserve of source material for breeding for high yield, earliness, and resistance to diseases and pests. *Proceedings on applied botany, genetics and breeding*. 2020;181(2):50-56. DOI: 10.30901/2227-8834-2020-2-50-56
- Kurina A.B., Kalashnikova L.M., Paritov A.Yu., Kirzhinov G.K., Artemyeva A.M. Mobilization of plant genetic resources from the territory of the Kabardino-Balkarian Republic. *Proceedings on applied botany, genetics and breeding*. 2020;181(3):9-16. DOI: 10.30901/2227-8834-2020-3-9-16
- Kutuzova S.N., Porokhovinova E.A., Brutch N.B., Pavlov A.V. Worldwide gene pool of fiber flax at VIR, and breeding of rust-resistant varieties. *Proceedings on applied botany, genetics and breeding*. 2020;181(2):57-64. DOI: 10.30901/2227-8834-2020-2-57-64
- Lebedeva T.V., Brykova A.N., Zuev E.V. Powdery mildew resistance of Nordic spring bread wheat accessions from the collection of the Vavilov Institute (VIR). *Proceedings on applied botany, genetics and breeding*. 2020;181(3):146-154. DOI: 10.30901/2227-8834-2020-3-146-154
- Leonova S., Gnutikov A., Loskutov I., Blinova E., Gustafsson K., Olsson O. Diversity of avenanthramide content in wild and cultivated oats. *Proceedings on applied botany, genetics and breeding*. 2020;181(1):30-47. DOI: 10.30901/2227-8834-2020-1-30-47
- Loskutova N.P., Ozerskaya T.M. Mobilization of plant genetic resources from Bangladesh, Pakistan and Bhutan. *Proceedings on applied botany, genetics and breeding*. 2020;181(1):128-138. DOI: 10.30901/2227-8834-2020-1-128-138
- Lyapunova O.A., Andreeva A.S. Cultivars and lines added to the gene pool of VIR's durum wheat collection in 2000–2019. *Proceedings on applied botany, genetics and breeding*. 2020;181(1):7-16. DOI: 10.30901/2227-8834-2020-1-7-16
- Malyshev L.L. Evaluating the representativeness of the bentgrass (*Agrostis* L.) gene pool collected across the Russian Federation and neighboring countries in the VIR collection. *Proceedings on applied botany, genetics and breeding*. 2020;181(2):9-13. DOI: 10.30901/2227-8834-2020-2-9-13
- Malysheva N.Yu., Malyshev L.L. An analysis of the *Medicago falcata* s.l. alfalfas collected in the ex-USSR territories for the fullness of their coverage. *Proceedings on applied botany, genetics and breeding*. 2020;181(3):17-24. DOI: 10.30901/2227-8834-2020-3-17-24
- Mamedova S.M., Vishnyakova M.A. Genetic diversity of broad beans (*Vicia faba*) in the collection of the Vavilov Institute and its use in breeding. *Proceedings on applied botany, genetics and breeding*. 2020;181(3):181-189. DOI: 10.30901/2227-8834-2020-3-181-189
- Mironenko N.V., Rogozina E.V., Gurina A.A., Khiutti A.V., Chalaya N.A., Afanasenko O.S. Wild relatives and interspecific hybrids of potato as source materials in breeding for resistance to golden nematode. *Proceedings on applied botany, genetics and breeding*. 2020;181(4):173-184. DOI: 10.30901/2227-8834-2020-4-173-184
- Muratova (Fadina) O.A., Beketova M.P., Kuznetsova M.A., Rogozina E.V., Khavkin E.E. South American species *Solanum alandiae* Card. and *S. okadae* Hawkes et Hjerting as potential sources of genes for potato late blight resistance. *Proceedings on applied botany, genetics and breeding*. 2020;181(1):73-83. DOI: 10.30901/2227-8834-2020-1-73-83
- Nekrasov A.Y. Soybean: sources from the VIR collection of genetic resources. *Proceedings on applied botany, genetics and breeding*. 2020;181(1):48-52. DOI: 10.30901/2227-8834-2020-1-48-52
- Orlova S.Yu., Yushev A.A., Shelenga T.V. Chemical composition of bird cherry fruits in the Northwestern region of Russia. *Proceedings on applied botany, genetics and breeding*. 2020;181(2):65-72. DOI: 10.30901/2227-8834-2020-2-65-72
- Panikhin P.A., Sokolov V.A. Fodder qualities of heterotic hybrids from intergeneric crosses between maize and eastern gamagrass. *Proceedings on applied botany, genetics and breeding*. 2020;181(1):17-23. DOI: 10.30901/2227-8834-2020-1-17-23



**Федеральный исследовательский центр Всероссийский институт генетических ресурсов растений имени Н.И. Вавилова**  
**N.I. Vavilov All-Russian Institute of Plant Genetic Resources**

- Peneva T.I., Lyapunova O.A. Electrophoretic patterns of gliadin as markers of genotypes in the analysis of the durum wheat landrace Kubanka. *Proceedings on applied botany, genetics and breeding*. 2020;181(4):127-135. DOI: 10.30901/2227-8834-2020-4-127-135
- Pryanishnikova V.E., Khmelinskaya T.V. Evaluation of the carrot gene pool for yield and quality indicators at Volgograd Experiment Station of VIR. *Proceedings on applied botany, genetics and breeding*. 2020;181(4):65-70. DOI: 10.30901/2227-8834-2020-4-65-70
- Rogozina E.V., Gurina A.A. Composition of the collection of primitive cultivated species within the *Solanum* L. section *Petota* Dumort. and contemporary trends in their research. *Proceedings on applied botany, genetics and breeding*. 2020;181(3):190-202. DOI: 10.30901/2227-8834-2020-3-190-202
- Sokolova D.V. Apomictic lines of sugar beet: development and studying. *Proceedings on applied botany, genetics and breeding*. 2020;181(4):93-101. DOI: 10.30901/2227-8834-2020-4-93-101
- Soldatenko A.V., Musaev F.B., Sokolova D.V. The 100th anniversary of the Federal Scientific Vegetable Center, the leader of Russian scientific vegetable growing. *Proceedings on applied botany, genetics and breeding*. 2020;181(2):156-166. DOI: 10.30901/2227-8834-2020-2-156-166
- Sushkevich A.V., Zabegaeva O.N., Burlyayeva M.O. The effect of growing conditions and the year of reproduction on sowing qualities of seeds, morphological and physiological characteristics in sprouts of *Vigna radiata* (L.) R. Wilczek. *Proceedings on applied botany, genetics and breeding*. 2020;181(2):73-86. DOI: 10.30901/2227-8834-2020-2-73-86
- Tikhonova O.A. Individual morphostructural components of yield in black currant cultivars. *Proceedings on applied botany, genetics and breeding*. 2020;181(1):53-63. DOI: 10.30901/2227-8834-2020-1-53-63
- Tikhonova O.A., Gavrilova O.A., Radchenko E.A., Verzhuk V.G., Pavlov A.V. Viability of black currant pollen before and after cryopreservation in liquid nitrogen, and its morphological features. *Proceedings on applied botany, genetics and breeding*. 2020;181(3):110-119. DOI: 10.30901/2227-8834-2020-3-110-119
- Travina S.N. Polar Experiment Station of VIR: the northernmost outpost of potato research. *Proceedings on applied botany, genetics and breeding*. 2020;181(1):139-145. DOI: 10.30901/2227-8834-2020-1-139-145
- Tyryshkin L.G., Kolesova M.A. The use of molecular-genetic and phytopathological methods to identify genes for effective leaf rust resistance in *Aegilops* accessions. *Proceedings on applied botany, genetics and breeding*. 2020;181(2):87-95. DOI: 10.30901/2227-8834-2020-2-87-95
- Yusova O.A., Nikolaev P.N., Bendina Y.B., Safonova I.V., Aniskov N.I. Stress resistance in barley cultivars of various agroecological origin under extreme continental climate conditions. *Proceedings on applied botany, genetics and breeding*. 2020;181(4):44-55. DOI: 10.30901/2227-8834-2020-4-44-55
- Yusova O.A., Nikolaev P.N., Safonova I.V., Aniskov N.I. Changes in oat grain yield and quality with increased adaptability of cultivars. *Proceedings on applied botany, genetics and breeding*. 2020;181(2):42-49. DOI: 10.30901/2227-8834-2020-2-42-49
- Zakharenko A.M., Nawaz M.A., Chaika V.V., Zemchenko I.V., Orlova T.Yu., Begun A.A., Romashko R.V., Galkina A.N., Karabtsov A.A., Chung G., Golokhvast K.S. Morphological characterization of biominerals from five multicellular marine algae species. *Proceedings on applied botany, genetics and breeding*. 2020;181(2):117-122. DOI: 10.30901/2227-8834-2020-2-117-122
- Zveinek I.A., Abdullaev R.A., Batasheva B.A., Radchenko E.E. Variability of the period between germination and heading in spring barley accessions from Dagestan. *Proceedings on applied botany, genetics and breeding*. 2020;181(1):24-29. DOI: 10.30901/2227-8834-2020-1-24-29
- Zveinek I.A., Kovaleva O.N. Developing donors of ultra-early maturity in barley. *Proceedings on applied botany, genetics and breeding*. 2020;181(4):83-92. DOI: 10.30901/2227-8834-2020-4-83-92
- Shilova O.A., Khamova T.V., Panova G.G., Korniyukhin D.L., Anikina L.M., Artemyeva A.M., Udalova O.R., Galushko A.S., Baranchikov A.E. Synthesis and Research of Functional Layers Based on Titanium Dioxide Nanoparticles and Silica Sols Formed on the Surface of Seeds of Chinese Cabbage. *Russian Journal of Applied Chemistry*. 2020;93(1):25-34. DOI: 10.1134/S1070427220010036
- Anisimova I.N. Structural and Functional Organization of Genes That Induce and Suppress Cytoplasmic Male Sterility in Plants. *Russian Journal of Genetics*.

**Федеральный исследовательский центр Всероссийский институт генетических ресурсов растений имени Н.И. Вавилова**  
**N.I. Vavilov All-Russian Institute of Plant Genetic Resources**

2020;56(11):1288-1297. DOI: 10.1134/S1022795420110022

Dobrovolskaya O.B. Supernumerary Spikelet Wheat Forms as Models for Studying Genetic Regulation of Inflorescence Development. *Russian Journal of Genetics*. 2020;56(11):1298-1307. DOI: 10.1134/S1022795420110034

Khlestkina E.K., Shvachko N.A., Zavarzin A.A., Börner A. Vavilov's Series of the "Green Revolution" Genes. *Russian Journal of Genetics*. 2020;56(11):1371-1380. DOI: 10.1134/S1022795420110046

Krylova E.A. The Role of *TFL1* Orthologs in Determining of Plant Architectonics. *Russian Journal of Genetics*. 2020;56(11):1308-1322. DOI: 10.1134/S1022795420110058

Mateikovich P.A., Punina E.O., Kopylov-Guskov Yu.O., Nosov N.N., Gudkova P.D., Gnutikov A.A., Machs E.M., Mikhailova Yu.V., Krapivskaya E.E., Rodionov A.V. ITS1–5.8S rDNA–ITS2 and *trnL-trnF* Sequences as Markers for the Study of Species Diversity of Altai Feather Grasses. *Russian Journal of Genetics*. 2020;56(4):417-428. DOI: 10.1134/S1022795420040067

Rodionov A.V., Amosova A.V., Krainova L.M., Machs E.M., Mikhailova Y.V., Gnutikov A.A., Muravenko O.V., Loskutov I.G. Phenomenon of Multiple Mutations in the 35S rRNA Genes of the C Subgenome of Polyploid *Avena* L. *Russian Journal of Genetics*. 2020;56(6):674-683. DOI: 10.1134/S1022795420060095

Rodionov A.V., Shneer V.S., Nosov N.N., Punina E.O., Gnutikov A.A. The Law of Homologous Series in Variation for Systematics. *Russian Journal of Genetics*. 2020;56(11):1277-1287. DOI: 10.1134/S1022795420110071

Shvachko N.A., Semilet T.V., Tikhonova N.G. Trichomes of Higher Plants: Homologous Series in Hereditary Variability and Molecular Genetic Mechanisms. *Russian Journal of Genetics*. 2020;56(11):1359-1370. DOI: 10.1134/S1022795420110083

Strygina K.V. Synthesis of Flavonoid Pigments in Grain of Representatives of Poaceae: General Patterns and Exceptions in N.I. Vavilov's Homologous Series. *Russian Journal of Genetics*. 2020;56(11):1345-1358. DOI: 10.1134/S1022795420110095

Sergievich A.A., Khoroshikh P.P., Artemenko A.F., Zakharenko A.M., Chaika V.V., Kodintsev V.V., Stroeva O.A., Lenda E.G., Tsatsakis A., Burykina T.I., Agathokleous E., Kostoff R.N., Zlatian O., Docea A.O., Golokhvast K.S. Behavioral impacts of a mixture of six pesticides on rats. *Science of The Total Environment*. 2020;727:138491. DOI: 10.1016/j.scitotenv.2020.138491

Shoeva O.Y., Mursalimov S.R., Gracheva N.V., Glagoleva A.Y., Börner A., Khlestkina E.K. Melanin formation in barley grain occurs within plastids of pericarp and husk cells. *Scientific Reports*. 2020;10(1):179. DOI: 10.1038/s41598-019-56982-y

Kholodov A., Tretyakova M., Golokhvast K. Using Ultrasound-Treated Washout from Conifer Needles and Fresh Snow Samples in Air Pollution Monitoring. *Scientific World Journal*. 2020. DOI: 10.1155/2020%2F3529437

Kholodov A., Golokhvast K. Air Pollution of Nature Reserves near Cities in Russia. *Scientifica*. 2020;2020:9148416. DOI: 10.1155/2020/9148416

Gadjiyev N.M., Lebedeva V.A., Rybakov D.A., Ivanov A.V., Zheltova V.V., Fomina N.A., Antonova O.Yu., Gavrilenko T.A. On using data from marker-assisted selection of source material and intervarietal hybrids in practical potato breeding. *Sel'skokhozyaistvennaya Biologiya = [Agricultural Biology]*, 2020;55(5):981-994. DOI: 10.15389/agrobiology.2020.5.981eng

Grigoryev S.V., Illarionova K.V. Evaluation of factors having an effect on cannabidiol amount in *Cannabis sativa* L. *Sel'skokhozyaistvennaya Biologiya = [Agricultural Biology]*. 2020;55(1):107-117. DOI: 10.15389/agrobiology.2020.1.107eng

Kim I.V., Volkov D.I., Zakharenko V.M., Zakharenko A.M., Golokhvast K.S., Klykov A.G. Composition and quantification of antocians in healthy-diet potato (*Solanum tuberosum* L.) varieties for growing and selection in the Russian Far East. *Sel'skokhozyaistvennaya Biologiya = [Agricultural Biology]*. 2020;55(5):995-1003. DOI: 10.15389/agrobiology.2020.5.995eng

Polonskiy V.I., Loskutov I.G., Sumina A.V. Evaluation of oat genotypes for the content of  $\beta$ -glucans in grain on the basis of its physical characteristics.

**Федеральный исследовательский центр Всероссийский институт генетических ресурсов растений имени Н.И. Вавилова**  
**N.I. Vavilov All-Russian Institute of Plant Genetic Resources**

*Sel'skokhozyaistvennaya Biologiya = [Agricultural Biology]*. 2020;55(1):45-52. DOI: 10.15389/agrobiology.2020.1.45eng

Rudakova A.S., Rudakov S.V., Artemyeva A.M., Kurina A.B., Kocherina N.V., Chesnokov Yu.V. Polymorphism of esterase isoenzymes of ripe seeds of samples of radish (*Raphanus sativus* L.). *Sel'skokhozyaistvennaya Biologiya = [Agricultural Biology]*. 2020;55(5):956-969. DOI: 10.15389/agrobiology.2020.5.956eng

Marhold K., Kučera Ja., Alexeeva T.V., Andriyanova E.A., Ankova T.V., Astashenkov A.Yu., Banaev E.V., Chepinoga V.V., Cheryomushkina V.A., Dorogina O.V., Elisafenko T.V., Gnutikov A.A., Ivanova D., Kljuykov E.V., Korobkov A.A., Kotseruba V.V., Krasnikov A.A., Krivenko D.A., Lomonosova M.N., Mitrenina E.Yu., Mochalova O.A., Myakoshina Yu.A., Nosov N.N., Osmonali B., Pavlichenko V.V., Petruk A.A., Protopopova M.V., Punina E.O., Rodionov A.V., Shner J.V., Stepanov N.V., Tomoshevich M.A., Ukrainskaja U.A., Vesselova P.V., Voronkova M.S., Zavgorodnyaya O.Yu. IAPT chromosome data 32. *Taxon*. 2020;69(5):1126-1132. DOI: 10.1002/tax.12322

Kirichenko K.Yu., Vakhniuk Igor, Rogulin Rodion, Kirichenko Aneta, Gridasov Alexander, Kosyanov Denis, Drozd Vladimir, Kholodov Aleksei, Piekoszewski Wojciech, Golokhvast, Kirill. Characteristics of fume sedimentation in the working zone during arc welding with covered electrodes. *Toxicological and Environmental Chemistry*. 2020. DOI: 10.1080/02772248.2020.1747465

Chaika Vladimir, Pikula Konstantin, Vshivkova Tatyana, Zakharenko Alexander, Reva Galina, Drozdov Konstantin, Vardavas Alexander I., Stivaktakis Polychronis D., Nikolouzakis Taxiarchis K., Stratidakis Antonios K., Kokkinakis Manolis N., Kalogeraki Alexandra, Burykina Tatyana, Sarigiannis Dimosthenis A., Kholodov Aleksei, Golokhvast Kirill. The toxic influence and biodegradation of carbon nanofibers in freshwater invertebrates of the families Gammaridae, Ephemerellidae, and Chironomidae. *Toxicology Reports*. 2020;7:947-954. DOI: 10.1016/j.toxrep.2020.07.011

Chernyshuk D.K., Ivachenko L.Ye., Doğan H., Raza G., Ali M.A., Golokhvast K.S., Nawaz M.A. Dihydroquercetin increases the adaptive potential of wild soybean against copper sulfate and cadmium sulfate toxicity. *Turkish Journal of Agriculture and Forestry*. 2020;44(5):492-499. DOI: 10.3906/tar-1912-50

Kamnev A.M., Antonova O.Yu., Dunaeva S.E., Gavrilenko T.A., Chukhina I.G. Molecular markers in the genetic diversity studies of representatives of the genus *Rubus* L. and prospects of their application in breeding. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and Breeding*. 2020;24(1):20-30. DOI: 10.18699/VJ20.591

Khiutti A.V., Rybakov D.A., Gavrilenko T.A., Afanasenko O.S. Resistance to causal agents of late blight and golden potato nematode of the modern cultivars of seed potatoes and their phytosanitary status in various agroclimatic zones of the European part of Russia. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and Breeding*. 2020;24(4):363-375. DOI: 10.18699/VJ20.629

Kurina A.B., Kosareva I.A., Artemyeva A.M. Genetic diversity of VIR *Raphanus sativus* L. collections on aluminum tolerance. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and Breeding*. 2020;24(6):613-624. DOI: 10.18699/VJ20.655

Kushnareva A.V., Shelenga T.V., Perchuk I.N., Egorova G.P., Malyshev L.L., Kerv Yu.A., Shavarda A.L., Vishnyakova M.A. Selection of an optimal method for screening the collection of narrow-leaved lupine held by the Vavilov Institute for the qualitative and quantitative composition of seed alkaloids. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and Breeding*. 2020;24(8):829-835. DOI: 10.18699/VJ20.680

Lyubimova A.V., Tobolova G.V., Eremin D.I., Loskutov I.G. Dynamics of genetic diversity of oat varieties in the Tyumen region at avenin-coding loci. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and Breeding*. 2020;24(2):123-130. DOI: 10.18699/VJ20.607

Mironenko N.V., Gavrilenko T.A., Khiutti A.V., Afanasenko O.S. Quarantine nematode species and pathotypes potentially dangerous for domestic potato production: populations diversity and the genetics of potato resistance. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and Breeding*. 2020;24(7):705-721. DOI: 10.18699/VJ20.665

Porotnikov I.V., Antonova O.Yu., Mitrofanova O.P. Molecular markers in the genetic analysis of crossability of bread wheat with rye. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and Breeding*. 2020;24(6):557-567. DOI: 10.18699/VJ20.649

Rozanova I.V., Khlestkina E.K. NGS sequencing in barley breeding and genetic studies. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and*

Федеральный исследовательский центр Всероссийский институт генетических ресурсов растений имени Н.И. Вавилова  
N.I. Vavilov All-Russian Institute of Plant Genetic Resources

*Breedin.* 2020;24(4):348-355. DOI: 10.18699/VJ20.627

Shelenga T.V., Malyshev L.L., Kerv Yu.A., Diubenko T.V., Konarev A.V., Horeva V.I., Belousova M.K., Kolesova M.A., Chikida N.N. Metabolomic approach to search for fungal resistant forms of *Aegilops tauschii* Coss. From the VIR collection. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and Breeding.* 2020;24(3):252-258. DOI: 10.18699/VJ20.618

Shvachko N.A., Khlestkina E.K. Molecular genetic bases of seed resistance to oxidative stress during storage. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and Breeding.* 2020;24(5):451-458. DOI: 10.18699/VJ20.47-o

Sidorova V.V., Kerv Yu.A., Konarev A.V. Identification of duplicate accessions in the sweet maize collection by means of zein electrophoresis. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and Breeding.* 2020;24(6):589-597. DOI: 10.18699/VJ20.652

Solovyeva A.E., Shelenga T.V., Shavarda A.L., Burlyayeva M.O. Comparative analysis of wild and cultivated *Lathyrus* L. species to assess their content of sugars, polyols, free fatty acids, and phytosterols. *Vavilovskii Zhurnal Genetiki i Seleksii=Vavilov Journal of Genetics and Breeding.* 2020;24(7):730-737. DOI: 10.18699/VJ20.66

Totsky I.V., Rozanova I.V., Safonova A.D., Batov A.S., Gureeva Yu.A., Kochetov A.V., Khlestkina E.K. Genomic regions of *Solanum tuberosum* L. associated with the tuber eye depth. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and Breeding.* 2020;24(5):465-473. DOI: 10.18699/VJ20.638

Vidakovic D.O., Perovic D., Semilet T.V., Börner A., Khlestkina E.K. The consensus rye microsatellite map with EST-SSRs transferred from wheat. *Vavilovskii Zhurnal Genetiki i Seleksii = Vavilov Journal of Genetics and Breeding.* 2020;24(5): 459-464. DOI: 10.18699/VJ20.48-o

Vishnyakova M.A., Kushnareva A.V., Shelenga T.V., Egorova G.P. Alkaloids of narrow-leaved lupine as a factor determining alternative ways of the crop's utilization and breeding. *Vavilovskii Zhurnal Genetiki i Seleksii=Vavilov Journal of Genetics and Breeding.* 2020;24(6):625-635. DOI: 10.18699/VJ20.656

