Agricultural Research & Technology
Open Access Journal
ISSN: 2471-6774

Juniper Publishers
key to the Researchers

Opinion
Volume 9 Issue 4 - August 2017
DOI: 10.19080/ARTOAJ.2017.09.555767

Agri Res & Tech: Open Access J
Copyright © All rights are reserved by IV Savchenko

Creating New Varieties and Hybrids of Agricultural Plants

IV Savchenko*

All-Russia Research Institute of Medical and Aromatic Plants, Russia

Submission: August 03, 2017; **Published:** August 11, 2017

***Corresponding author:** IV Savchenko, All-Russia Research Institute of Medical and Aromatic Plants, Russia, Email: vilarnii@mail.ru

Opinion

Of about 39,0000 species of higher plants that grow on earth, only 400arc used for food. The first to notice this fact was N.I. Vavilov. Vavilov organized botanical -agronomic expeditions, covering all continents. He discovered ancient loci of imermutation of cultured plants on their territories and made a great contribution to the study of global plant resources and the origin, taxonomy, and geography of cultured plants.

Developing Vavilov's doctrine of genetic resources creatively, scientists of the RAS Division of Agricul¬tural Sciences annually organize 12-20 expeditions to collect genetic materials.

The total genetic pool of agricultural crops kept at the institutes comprises over 370000 specimens (32,5400 VIR samples and 50,000 samples at other institutes). The genetic pool of agricultural crops is annually replenished with 260-350 high-quality vari¬eties and hybrids using state-of-the-art genetic-breeding methods, including biotechnological ones with molecular genetic marking.

In Russia, 42 breeding centers function in all regions that work with economically valuable agricul¬tural and medicinal crops. In recent years alone, the breeders of the Krasnodar Research Institute of Agriculture have used genetic bridges (especially triticale) to replenish the grain crop gene pool with 100 energy-efficient winter wheat varieties with high compensatory properties. The cost of creation of one variety is $6.8-$8.9 mln. For example, the winter wheat variety Grom cost $6.8mln.

The development of highly adaptive varieties is pri¬ority task of stabilizing crop production in the harsh continental climate zone (the Volga Region). A classic example is selective breeding of spring wheat at the Agricultural Research Institute for the Southeast Region (ARISER), where an entire trend of breeding varieties with an improved root suction force (25-32atm) has been formed using the global gene pool.

Soybeans are a major source of plant protein. The Institute for Soybean Research replenished the soybean gene pool for the conditions of the Far East with productivities of more than 3-4 t/ha; VN1IMK and VNIIZBK created soybean varieties for the Southern mid Central regions of Russia with a produc¬tivity of 3 t/ha.

Domestic breeders produced the promising columnar apple tree varieties (All-Russia Research Institute of Fruit Crops, All-Russia Selection-Technological Institute of Horticulture and Nursery) that combine scab immunity (gene Vf), winter hardiness (-41 °C) and highly marketable fruit properties.

Vegetable scientists have developed technologies and methods of expanding genetic diversity, accelerat¬ing vegetable crop breeding, obtaining raw mate¬rials and products for functional nutrition, and reduc¬ing the contents of radionuclides and heavy metals in crop output. A genetic collection of donors of eco¬nomically valuable potato characters was formed.

Our country has a powerful potential to produce

Phyto preparations, since folk medicine uses 2000 plant species and traditional med¬icine-326. For Phyto chemical studies on wild-growing plants, the VILAR scientists collect them in various regions of Russia. VILAR has the country's only Botanical Garden of Medicinal Plants, which grows 1272 plant species of 93 families, including 256 tree and shrubbery species, 921 grass species, and rare and endangered species. The greenhouse complex con¬tains 373 tropical and subtropical plant species. The Botanical Garden's seed collection has 407 medicinal plant species. There is a unique herbarium with 78

600 specimens of 198 families, 1633 genera, and 20 748 species. On the basis of the genetic pool available, VILAR created varieties and developed over 100 medic¬inal products.

The priority tasks in studies on genetic resources are Russia's floristic diversity and resource, potential; the improvement of the strategy and mod¬ern methods of seeking plant genetic resources; the development of scientific basics of the reliable conser¬vation, comprehensive study, and rational use of genetic resources of cultured plants and their wild congeners; the amplification of molecular genetic monitoring of the genetic pool in crop production and the creation of a bank of transgenic plants; the expan¬sion of methods of molecular genetics to identify new genes, regulatory elements, and physiological-bio¬chemical mechanisms; work in molecular breeding.

This work is licensed under Creative Commons Attribution 4.0 License
DOI: 10.19080/ARTOAJ.2017.09.555767

Your next submission with Juniper Publishers will reach you the below assets

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats
  (Pdf, E-pub, Full Text, Audio)
- Unceasing customer service

Track the below URL for one-step submission
https://juniperpublishers.com/online-submission.php

How to cite this article: IV Savchenko. Creating New Varieties and Hybrids of Agricultural Plants. Agri Res & Tech: Open Access J. 2017; 9(4): 555767. DOI: 10.19080/ARTOAJ.2017.09.555767.