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ENRICHMENT OF GENETIC RESOURCES OF VEGETABLE CROPS WITH NON-TRADITIONAL VEGETABLE CROPS

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Abstract
The article presents information about the current state of the collection of vegetable and fruit crops stored in the gene pool and the practice of enriching this gene pool with non-traditional vegetable crops.

Keywords: gene pool, crop samples, collection, genetic resources, population.

All over the world, the acclimatization of many cultivated plants, including vegetable crops, is often carried out in the form of introduction (Bazilevskaya, 1964). Some new types of vegetables have taken the leading positions on farms, displacing the varieties that have been cultivated for a long time, while others have almost ceased to be in demand. In scientific agricultural literature, they are called “non-traditional vegetable crops”.

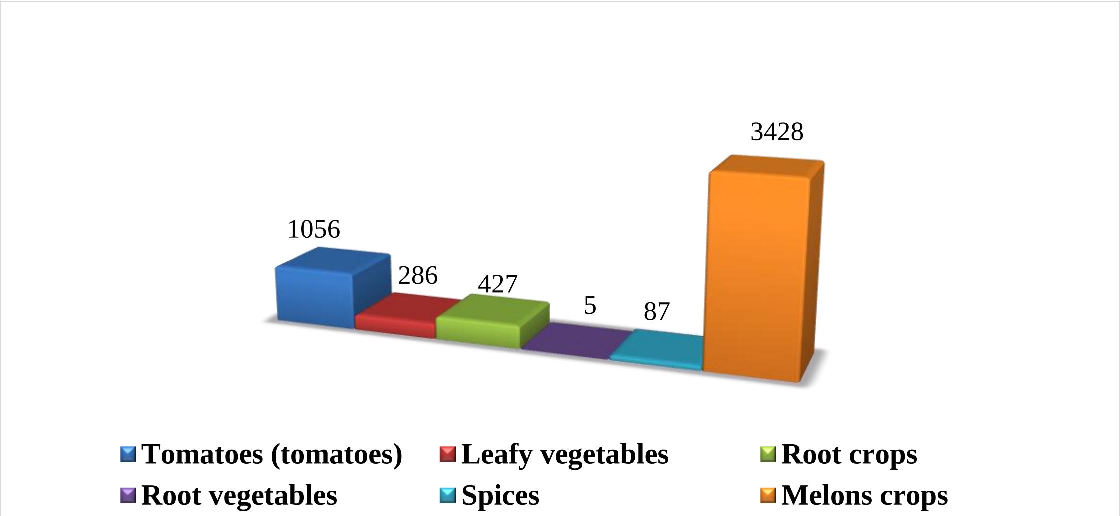
Lack of planting material, insufficient knowledge of the population (potential consumers) about the nutritional and medicinal value of non-traditional crops, and lack of information about the specific technology of growing these crops are the reasons for insufficient use of non-traditional crops (Jena et al., 2018).

In addition to these three reasons, another important factor is the presence of agrobiological factors that limit the possibility of effective cultivation of such crops in real agrocenosis conditions of many regions.

A long vegetation period that exceeds the duration of the frost-free period in many regions, weak resistance to high and low temperatures, high sensitivity of generative organs to environmental factors, susceptibility to diseases and pests, incompatibility of the quality of the marketed products with the consumer, the possible possibility of new crops, including the possibility of cultivation as functional products limits.

The problem of expanding production and the demand for new crops N.I. Vavilov played a major role in the collection and study of new vegetable plants. Many new species were introduced to the institute's collection for the first time with the active participation of Vavilov (Vavilov, 1987).

Currently, there are more than 5,200 samples belonging to 14 families in the collection of vegetable and vegetable crops kept at the Research Institute of Plant Genetic Resources.



Graph 1. *The status of samples of the world collection of vegetable and pulse crops stored in the Research Institute of Plant Genetic Resources.*

The samples available in the collection of vegetables and fruit crops are as follows:

Tomatoes (tomatoes) - 1056 samples, including: tomatoes - 750 samples, pepper - 186 samples, eggplant - 120 samples;

Leafy vegetables - 286 samples, including: cabbage - 104 samples, lettuce - 47 samples, dill - 68 samples, parsley - 19 samples, celery - 46 samples, spinach - 2 samples;
Root crops - 427 samples, including: carrots - 164 samples, radish - 16 samples, radish - 80 samples, turnip - 36 samples, beetroot - 40 samples, sugar beet - 87 samples, parsnip - 4 samples;
Root vegetables - 5 pieces, including: sweet potato (sweet potato) - 3 pieces, Jerusalem artichoke - 2 pieces.
Spices - 87 pieces, including: basil - 17 samples, coriander - 9 samples, nigella - 10 samples, anise - 1 sample, cumin - 5 samples, fennel - 4 samples, amaranth - 39 samples, artichoke - 2 samples;
Melons crops - 3428 samples, including: melon - 1238 samples, watermelon - 941 samples, pumpkin - 1174 samples, cucumber - 75 samples.
The vegetable crops stored in the collection mainly belong to 9 families:– Brassicaceae Burn.; – Solanaceae Juss.; – Leguminosae Juss.; – Cucurbitaceae Juss.; – Alliaceae Borkh.; – Apiaceae Lindl.; – Amaranthaceae Juss.; – Asteraceae Bercht. et J. Presl; – Lamiaceae Martinov.
Enrichment of the gene pool of vegetable crops with non-traditional vegetable crops with biochemical value and the possibility of being used as functional food creates an opportunity to enrich the products consumed by the population with new vegetable products and thereby meet the population's demand for vegetable products throughout the year. These non-traditional vegetable crops, which can enrich the gene pool of vegetable crops, are as follows.
Artichoke (Supaga) is an annual and perennial vegetable crop. 10-11 species grow in Mediterranean countries. It is cultivated in France, Italy, India, Algeria and other countries. The species of thorny artichoke (Supaga scolymus L.) is more cultivated in southern Russia, Moldavia, and Ukraine. Artichoke is very bushy and reaches 2 m in height.

Figure 1. Artichoke (Supaga) plant

The flowers are blue-purple in color and form large inflorescences (one inflorescence weighs 100–200 g). Seret is used for bouquet and basket ball food. Artichoke contains sugar, protein (2.5-3%), carbohydrates (7-15%), C (0.4 mg %), vitamins B1, B2, carotene, up to 30% oil in the seeds. Raw and canned, boiled artichokes are eaten with sauces and salads. Carbohydrates contain inulin, which is useful for diabetes. In the southern zones, 3-4-year crops are planted, in the cold zones, one-year crops are planted in a scheme of 100x80 cm. Productivity is 50–250 ts/ha (15–50 thousand flowers). Artichokes usually bloom the second year after being planted as a perennial crop. Currently, the zoning of this plant is being carried out at the Scientific-Research Institute of Plant Genetic Resources. 2 collection samples are stored in the gene fund.
Okra (Hibiscus esculentus L.) is an annual plant belonging to the marigold family. The height reaches 2.5 m. It resembles cotton in its appearance and flowering. Homeland — East Africa. Varieties are divided into vegetable and fiber groups. Fiber varieties are grown in India, Africa and the USA.

Figure 2. Okra (Hibiscus esculentus L.) plant

The unripe fruit is used in liquid food and salads as a vegetable green. The fruit contains 3% protein, 0.5% fat, 8% carbohydrates, and the ripe seed contains 18% oil. The fruit can be eaten raw, cooked, fried, canned. The stem yields a white coarse fiber; artificial coffee is made from roasted seeds. It is grown mainly as a vegetable crop in tropical and subtropical countries, North America, Southern Europe, Transcaucasia, Crimea, southern Ukraine, partly in Central Asia. Currently, the zoning of this plant is being carried out at the Scientific-Research Institute of Plant Genetic Resources. Currently, there are no collection samples in the gene pool.

Batat, sweet potato (Ipomoea batatas) is a heat-loving perennial plant belonging to family. Native to Mexico and Central America. As a food, it is used in canning, starch and alcohol industries. It has been cultivated in China since ancient times. It is grown in Japan, USA, Spain, India, Transcaucasia and Central Asia.

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Figure 3. Sweet potato (Ipomoea batatas) plant

Productivity is 200-300 ts/ha. Sweet potato is propagated from cuttings. In the months of February and March, cuttings are prepared from potato shoots in greenhouses and rooted in greenhouses. Seedlings are planted in May at a distance of 70-80 cm between the rows, 30-40 cm between the bushes in the row. The area around the seedling is softened, fertilized, watered 12-14 times. In September-October, the leaves are harvested, and then the potatoes are dug. Palagi (green, dried, ensiled) is good fodder for livestock.

Brussels sprouts (Brassica oleracea var. Gemmifera) are biennial vegetable crops belonging to the cruciferous family. It is widely cultivated in Western Europe, especially in Great Britain. The stem grows upright, the banded siliceous leaves are produced in the upper part, and fruit heads (up to 90 with a diameter of 2-2.5 cm) are formed in the axils of the leaves.

Figure 3. Brussels sprouts (Brassica oleracea var).

The following year, the tip buds and lateral branches produce flower buds and the seed pods are finished. Unlike cabbage, Brussels sprouts require less moisture, fertile land,

and are more resistant to cold and diseases. It contains easily digestible substances, 2-5% sugar, 5.5-7% protein, 70-290 mg of vitamin C.

These non-traditional vegetable crops are plants that deserve priority inclusion in introduction programs in terms of their biochemical value and potential for use as functional foods.

Literature

1. Boboeva N. T. et al. The fight against avena fatua in the middle of a wheat field //International Journal on Integrated Education. – T. 3. – №. 2. – C. 62-64.
2. Jena A.K., Deuri R., Sharma P.S., Singh S.P. Underutilized vegetable crops and their importance. J. Pharmacog. Phytochem. 2018;7(5): 402-407.
3. KHURRAMOVNA S. S. et al. Medicinal plants in folk medicine //European Scholar Journal. – 2021. – T. 2. – №. 3. – C. 109-112.
4. Menglikulovich A. S. et al. RESTORATION OF SEED FERTILITY IN ORDER TO RENEW THE SAMPLES OF VEGETABLE CROPS STORED IN THE GENE POOL //American Journal of Interdisciplinary Research and Development. – 2022. – T. 8. – C. 91-95.
5. Sullieva S. X., G'Zokirov Q. The Structure of the Yield of Winter Wheat When Using Herbicides Against Weeds //International Journal on Integrated Education. – T. 3. – №. 11. – C. 37-40.
6. Sullieva S., Zokirov K. Biology of weeds //Scientific Bulletin of Namangan State University. – 2019. – T. 1. – №. 2. – C. 120-124.
7. Vavilov N.I. Five Continents. Moscow: Mysl Publ., 1987;19-171.
8. Xurramovna S. S. et al. Use Atlantis Herbicide for Avena Fatua in the Middle of a Wheat Field //International Journal on Integrated Education. – T. 3. – №. 1. – C. 45-47.
9. Базилевская Н.А. Theory and Methods of Plant Introduction. Moscow, 1964. (in Russian).