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CITRUS SELECTION ACHIEVEMENT

Fakhrutdinov M. Z., Islamov S.Ya. Khodjayeva G.S.

Tashkent state agrarian university

Worldwide citrus selection has been dealt with by many scientists in different periods, such as Gallezio (1811), Decandol (1824), Engler (1897), Swingle (1943), Luss (1947), Tanaka (1954), Fakhrutdinov (1960) and others:

Under the development of citrus fruiting is understood the acquisition of a fertile and high-quality product at as little cost as possible. There are various measures to do this, which include improving productivity and its quality by improving care, organizing specialized smallholding farms, applying in the production of new, fertile, varieties with good crop quality, introducing advanced agrotechnical measures, combating diseases and pests with new advanced methods, caring for lemon, orange, tangerine and grapefruit seedlings, harvesting, storage, export processing works and creating new varieties.

The creation of new local varieties is carried out in favorable greenhouse climates, with highly productive methods based on local varieties, with ways to acclimatize seedlings to greenhouses, care in climatic conditions and give them various forms.

The most effective way to accelerate modern citrus fruiting is to create new local stunted growing varieties, grow them in accordance with greenhouse climatic conditions and propagate their seedlings by rooting and planting them in greenhouses in the short term.

In such greenhouses, in addition to the fact that the entry of seedlings into the crop is faster in the short term, the yield increases rapidly, and the quality of the crop is much higher, and the harvest is more fertile.

The creation of new domestic varieties in modern greenhouse conditions, the development of citrus fruiting as a result of the application of advanced agrotechnical measures, leads to a 1.5 – 1.7 times increase in yield. Alternatively, it has been found in experiments that the quality of the crop is much higher.

Quality citrus fruit varieties created in recent years in our republic are distinguished by their high fertility and disease resistance. Since many are unable to adapt to our climatic conditions of the varieties brought from abroad, from warm regions, there are difficulties in introducing them into production. Citrus fruit selection creates the need to obtain starter items that are genetically resistant to various stress factors, diseases and pests, as well as to develop and use local varieties so that overall productivity does not decrease.

All scientific applied research works to be carried out is carried out according to the main character indicators of zoned varieties. Only competitive withstand forms can be found in the selection process and their place in the creation of varieties. Local varieties have been created that are adapted to the climatic conditions of Uzbekistan using hybrid, analytical and synthetic selection methods of long geogrfic forms of citrus plant, contain valuable signs of fertile, disease-resistant, short growing. For the first time in the history of citrus plants, a new native citrus plant suitable for the climatic conditions of Uzbekistan was created by the varieties of lemon F-1 Tashkent in 1967, F-2 Yubileyniy in 1970, F-3 in 1980, F-4 in 1980,

F-5 in 1980, were created by the breeder scientist agronomist academician Zayniddin Fakhriddinov in 1967-1980.

By 2019, a student and a son who continued the work of Zayniddin Fakhriddinov, breeder scientist agronomist Muhamadaziz Fakhriddinov also created grapefruit pomelo Zaynutdin No. NAP 00274 variety, orange Uzbekistan No. NAP 00275 variety and tangerine Tashkent No. NAP 00276 varieties.

In 2021, as a result of M. Z. Fakhrutdinov's research, the creation of the new Uzbek tangerine variety No. NAP 00367, the lemon Turon No. NAP 00368, the lemon ZM-San at 00369 Variety, the Grapefruit ZF Yubileyniyy No. NAP 00366 variety and the grapefruit pomelo Renaissance III No. NAP 00379 variety can be the basis for the novelty.

This method, later, paved the way for the creation of new varieties on the citrus plant. Currently, in the selection process using analytical and synthetic selection methods, it is possible to enrich varieties belonging to a new family with crossbreeding (resistance to climatic conditions, fertility, fastness, crop quality). When creating new lemon varieties, Z.Fakhriddinov conducted many experiments on which variety to carry out the selection method using analytical and synthetic selection methods when creating domestic hybrid varieties of the F-1, F-2, F-3, F-4 F-5 lemon, in order to adapt to climatic conditions, localization, disease tolerance and preserve valuable farm signs, re-interbreeding was effective in pollinating parental flowers. The basis for the creation of new promising varieties was laid by re-crossing (by grafting and pollinating the flower) citrus varieties belonging to the lemon F-2 native hybrid variety for a month. The selection process for the creation of new promising citrus varieties with re-selection methods has been developed and is being used in selection work by hybridizing varieties of citrus plants and carrying out selection work perfectly.

By artificially interbreeding male and maternal flowers by crossbreeding the local zoned variety of the grapefruit pomelo variety (bud grafting on F-2 Yubileyniy lemon), using the method of multiple selection from hybrids, studying the variability of crossbreeding of quality indicators of morpho-farm and valuable citrus fruits, selection seed work was carried out and the **pomelo Zaynutdin variety** of grapefruit was obtained. From citrus plant families, the **pomelo Zainutdin No. NAP 00274** variety of citrus plant grapefruit was created, which has its main indicators, and selection seed work is carried out regularly (resistant to our climatic conditions, high-quality, fertile). The difference of this variety from the default varieties is its origin, and differs with short growing, climatic compliance, fastness, yield, disease, tolerance to external environmental factors and high yield quality. M.Fakhrutdinov, 2019.

The orange Uzbekistan variety of the citrus plant was created by re-crossbreeding the Orange Gamlin variety (grafting lemon into the F-2 local variety) and the flower and by selecting it many times in greenhouses. On the basis of multiple cross-breeding in the selection of the citrus plant, the variety of **orange Uzbekistan No. NAP 00275** was created, with stable signs with high required basic indicators, varietal, fastness, cross-breeding and selection of seed breeding, with regular carrying out of crop production, with high crop quality. This variety differs from the control varieties in that it is suitable for growing, diseases and various climatic conditions, especially with high yield indicators M.Fakhrutdinov 2019.

The **tangerine Tashkent variety No. NAP 00276** was created by the selection of the tangerine Unshu variety (F-2 lemons grafted and crossed into the Yubileyniy local variety) on the basis of grafting the citrus plant by the selection method and blending its flowers. The resulting new variety, the quality of the crop with the indicators of growing, fertile, fastness and other character, in order to enrich the tangerine Tashkent variety, was created using the method of selecting citrus plants many times, studied in detail and in order to enrich the tangerine Tashkent variety. This citrus plant was called **Tashkent tangerine variety**. The difference between this variety from the control varieties is in the short growing, fertile, tolerance to diseases, external environmental factors, especially frost in greenhouse conditions. Hence, **the pomelo Zayniddin variety** of citrus plants zoned grapefruit, the Uzbekistan variety of promising orange, and the origin of tangerine Tashkent varieties, based on many years of scientifical-practical research.Fakhrutdinov 2019.

New tangerine Uzbekistan variety. By multiple selection of the tangerine Klimantin variety (grafting and cross-breeding lemon into the F-2 Yubileyniy local variety) based on grafting by selection method and crossing its flowers, the **New tangerine Uzbekistan No. NAP 00367** variety was created. Due to the fact that the resulting new variety, the quality of the crop with the indicators of the growing, fertile, fastness and other character, was in full demand, tangerine was created using the method of selecting citrus plants many times, and in order to enrich the new Uzbekistan variety studied in detail. This citrus plant was called the **new Uzbekistan tangerine** variety. The difference of the new Uzbekistan variety from the control varieties is the short growing, fertile, tolerance to diseases, external environmental factors, especially in greenhouse conditions to frost 2019 M.Fakhrutdinov 2021.

Turon variety of lemon. By multiple selection of the Tashkent lemon variety (grafting and cross-breeding the lemon into the F-2 Yubileyniy local variety) based on grafting by selection method and crossing its flowers, the **lemon Turon No. NAP 00368 variety** was created. The resulting new variety was created using the method of selecting citrus plants for many times, with a detailed study of new varieties and in order to enrich the Turon variety of lemon, due to the quality of the crop, full of demand, with the indicators of the growing, fertile, fastness and other characteristics. This citrus plant was called Turon lemon variety. The difference of the new Uzbekistan variety from the control varieties is short growing, fertile, tolerance to diseases, external environmental factors, especially cold in greenhouse conditions M.Fakhrutdinov 2021.

The lemon ZM-San at variety. By multiple selection of the Yubileyniy lemon variety (grafting and cross-breeding the lemon into the F-1 Tashkent local variety) based on grafting by selection method and crossing its flowers, **the lemon ZM-San at No. NAP 00369 variety** has been created. The resulting new variety was created using the method of selecting citrus plants for many times, studied in detail in order to enrich the ZM-San at variety of lemon, due to the quality of the crop, full of demand, with the indicators of the growing, fertile, fastness and other characteristics. This citrus plant was called a lemon ZM-San at variety. The difference of the new Uzbekistan variety from the control varieties is short growing, fertile, tolerance to diseases, external environmental factors, especially cold in greenhouse conditions M.Fakhrutdinov 2021.

ZF Yubileyniy variety of grapefruit. Using the method of multiple selection of male and maternal flowers by interbreeding the local zoned variety of the grapefruit pomelo variety (bud grafting on F-2 Yubileyniy lemon), using the method of cross-breeding the quality indicators of Morpho-farm and valuable citrus fruits, selection seed work was carried out and th**e grapefruit variety pomelo ZF Yubileyniy No. NAP 00366 was obtained.** The pomelo ZF Yubileyniy # NAP 00366 variety of citrus plant grapefruit has been created, which embodies the main indicators of citrus plant families, and selection is carried out regularly with seed-growing work (resistant to our climatic conditions, high-quality fertile). The difference of this variety from the control varieties is its origin, and differs with short growing, climatic compliance, fastness, yield, disease, tolerance to external environmental factors and high yield quality M.Fakhrutdinov 2021.

Pomelo Renaissance III variety of grapefruit. By artificially interbreeding male and maternal flowers by interbreeding the local zoned variety grapefruit pomelo variety (bud grafting on F-2 Yubileyniy lemon), using the method of multiple selection from hybrids, studying the variability of crossbreeding of Morpho-farm and valuable citrus fruit quality indicators, selection seed work was carried out and **the pomelo Renaissance III No. NAP 00379 variety** of grapefruit pomelo grapefruit was obtained. From within the citrus plant families, a variety of citrus plant grapefruit pomelo Renaissance III No. NAP 00379 was created, which embodies its main indicators, and selection seed work is carried out regularly (resistant to our climatic conditions, high-quality fertile). The difference of this variety from the default varieties is its origin, and differs with short growing, climatic compliance, fastness, yield, disease, tolerance to external environmental factors and high yield quality M.Fakhrutdinov 2021.

The research is carried out in cooperation with breeder-scientists of the Tashkent State Agrarian University. Scientists Fakhrutdinov M.Z., Islamov S.Ya., Juraev S.T., Khurramov A.A., using analytical and synthetic selection methods in collaboration with Z. Fakhriddinov, they continue the started work on

citrus selection. Furthermore, an application was submitted to the intellectual property agency for a patent on the creation of the lemon variety "**New Tashkent**", the **lemon variety ToshDAU 93** and the tangerine variety **Mediana**.

These promising citrus plant varieties, created as a result of selection achievements, differ in character indicators that meet the basic requirements, and they are protected by a patent.

CONCLUSIONS

1. In greenhouse laboratory conditions and on the basis of Z. Fakhruddinov's methods used in selection work, new native plant varieties of lemon, tangerines and grapefruits were prepared, adapted to climatic conditions, as well as improved styles were developed and new varieties with high yield, stress-resistant varieties were created, intertype and interspecific hybridization with cultural varieties were made, by grafting and artificial crossbreeding, allowed to select forms and create on their basis fertile, sweet, vitamin-rich, disease-resistant new varieties.
2. It was studied the conditions of widespread citrus plants in the development of growth based on the main seed and species, botanical characteristics and biological features, oranges, tangerines and grapefruits from citrus crops, it was shown that it is possible to create varieties.
3. In the results of the study, was found exportable economically productive new varieties, it was observed that there was a fertile short growing tree in soil conditions of the greenhouse .
4. The citrus plant variety grapefruit pomelo Zainiddin has been found to be resistant and fast to a fertile disease by the re-selection method, and selection is based on the study and analysis of seeding processes.
5. The Uzbekistan citrus plant variety of orange was obtained as a result of hybridization and multiple selection with cultivated varieties based on cross-bred hybrids, and the difference from controlled varieties was confirmed by the study and analysis of fertility, fast-ripeness, disease tolerance.
6. The Tashkent citrus plant variety of tangerine was created by the hybridization method of selection, the difference from controlled varieties is based on the study and analysis of genetic, selection processes of its origin, fertility, disease, especially frost tolerance in greenhouse conditions.
7. Based on the analysis of the grapefruit Zayniddin citrus plant variety and tangerine Tashkent citrus plant varieties in different greenhouse climates, the grapefruit pomelo Zayniddin citrus plant variety was found to have water resistance, frost and disease resistance in comparison with the optimal regime.
8. The citrus plant variety of orange Uzbekistan was created by the hybridization method of selection, the scientific practical basis was the high quality of origin, fertility, sweetness of fruits and vitamin-richness.
9. My Teacher Z. Fakhruddinov's started work continues, the purpose is that for the Uzbekistan variety of oranges, the Tashkent variety of tangerines and the grapefruit Zaynutdin variety normative documents have been obtained, the necessary information has been developed.
10. From citrus plants, oranges, tangerines and grapefruits were created with a high yield, resistant to stress factors, exportable local promising varieties were created and carried out on the basis of technology developed under optimal conditions, as a result of compliance with the standard of the obtained new varieties, the necessary documentation was obtained.
11. Zoned grapefruit pomelo Zayniddin of citrus plants, promising Orange Uzbekistan, and tangerine Tashkent varieties were granted a Patent in 2019 by the intellectual property agency of the Republic of Uzbekistan.
12. In 2021, as a result of M.Fakhrutdinov's research work, the creation of the new Uzbekistan tangerine variety No. NAP 00367, the Turon of lemon No. NAP 00368 variety , the ZM-San at 00369 variety of lemon, the ZF Yubileyniyy No. NAP 00366 variety of grapefruit and the pomelo Renaissance III No. NAP 00379 varieties of grapefruit can be the basis for the novelty.
13. In 2023, a breeder scientist of the Tashkent State Agrarian University Fakhrutdinov M.Z., Islamov S.Ya., Juraev S.T., Khurramov A.A., in collaboration with analytical and synthetic selection methods of lemon "new Tashkent" variety, lemon ToshDAU 93 variety and tangerine Mediana varieties have been applied to the intellectual property agency for patents for their creation, these promising citrus plant varieties differ in character indicators that meet the main requirements.

USED LITERATURE

1. Fahriddinov Z. An ordinary miracle. Tashkent, 1974
2. Desyatichenko A.M. Promising varieties of citrus crops for the protected soil of Uzbekistan. Problems of development of subtropical fruit growing in Uzbekistan. Tashkent: Mehnat, 1985.
3. Fakhriddinov M.The typical secrets of lemon breeding, Tashkent. 2014
4. Namozov F., Islamov S. Atabaev M., Allanov Kh., Karimov A., Khaitov B., Kee Woong Park. Agronomic Performance of Soybean with Bradyrhizobium // Inoculation in Double-Cropped Farming. – Switzerland, 2022. – Volume 12. – Issue 6. – P. 855-865. https://doi.org/10.3390/agriculture12060855
5. Khaitov B., Karimov A.A.,Toderich K.,,Sultanova Z., ,Mamadrahimov A., Allanov Kh., Islamov S. Adaptation, grain yield and nutritional characteristics of quinoa (Chenopodium quinoa) genotypes in marginal environments of the Aral Sea basin // Journal of Plant Nutrition 21 Dec 2020). – London, 2020. – P. 1365-1379 (doi.org/10.1080/01904167.2020.1862200)