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ANALYSIS OF THE VALUABLE ECONOMIC CHARACTERISTICS OF THE GRAPEFRUIT (C. PARADISE M.) PLANT

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Abstract

In order to carry out selection processes in Grapefruit cultivation, the starting dates of phenological phases were observed for 3 lemon varieties and 5 mandarin varieties, with the beginning of phenological phases ranging from March 14th to 20th, and flowering starting from April 8th to 24th. The duration of flowering ranged from 12 to 18 days. The second growth period in the varieties started from May 6th and continued until June 20th, with a duration ranging from 23 to 46 days during this phase.

Keywords: Yield, introduction, variety, suitable, citrus, thin, rod, drug, pencil, grower, spray, tolerance, long, phase, valuable, farm, creamy, farm, symptoms, healthy, permanganate.

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Introduction

Worldwide, the area planted with grapefruit is approximately 400,000 hectares. The largest plantations are found in countries such as China, Vietnam, and Sudan. These crops are typically grown in subtropical climates—in various regions of South Asia, Africa, the Americas, and the Middle East. According to FAO data, 13,861 thousand tons of grapefruit were produced worldwide, including China – 124.9 thousand, Vietnam – 89.4, Sudan – 28.0, Mexico – 20.8, Thailand 17.7, South Africa 13.2, the USA 13.2, Syria 9.5, and the Philippines 5.0 thousand hectares are planted. According to data from the State Statistics Committee of Uzbekistan, Uzbekistan exported goods worth 4.5 million US dollars to 8 foreign countries in January-November 2022. exported 4.1 thousand tons of grapefruit. During the current year, 32 thousand tons of the product were produced. In the Republic, from January to June 2023, 3.5 thousand tons of grapefruit, valued at 2.9 million US dollars, were exported to 7 foreign countries. In recent years, modern grapefruit orchards have been established on 730 hectares in the Republic, with the attraction of foreign credit lines totaling \$46 million. As of today, grapefruit is being cultivated on 2,332 hectares in the Republic. It is cultivated in Surxondaryo Province, Qashqadaryo Province, Farg'ona Province (in warm areas), and Tashkent Province (in greenhouse conditions).

Research results

Vegetative propagation. It is the regeneration of a plant from its vegetative parts (stem, root, bud, or leaf). This propagation method is based on the plant's ability to be fully regenerated from any of its parts. Citrus crops can be propagated by rooting hardwood or green cuttings, by bud or stem grafting, and by layering methods. Taking the above into account, in our research we set out to continue our future scientific work by propagating and cultivating the new local grapefruit variety from seed and by producing grafted seedlings. Scientifically organize the vegetative propagation of the new grapefruit cultivar No. 2017. To prepare the

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special nursery, a 1 m-wide area—5 m or 10 m long, depending on the site—was excavated to a depth of 50 cm, and at the very bottom of the dug pit, a 5–10 cm layer of crushed stone fines was laid. On top of that, 10–15 cm of rotted manure or biohumus was added, followed by 25–30 cm of clinch sand. The nursery was then enclosed with wire mesh and covered with polyethylene sheeting to create a microclimate. Cuttings with 3–4 eyes, each 8–10 cm long, were prepared from one-year-old shoots of the grapefruit No. 2017 hybrid. When preparing the cuttings, the lower cut was made just below a bud, and the upper cut was made 1–1.5 cm above a bud. To prevent moisture evaporation from the cuttings, the number of leaves was reduced and the leaf blades were cut in half. The cuttings were tied in bundles of 40–50 and, for good rooting and before planting, were soaked for 14–16 hours at a depth of 2–2.5 cm in the eco-safe, biologically active growth regulator Uzhiton. Today, new stimulants—growth regulators derived from environmentally safe, local raw materials—the Uzhiton preparation, have been included on the State Chemical Commission's list for use in citrus cultivation since 2018, replacing harmful substances. The cuttings were planted in a 5×5 pattern and watered once in the morning with a watering can. At that time, the greenhouse roof was opened, ventilated for 5–10 minutes, and then closed again. Thus prepared cuttings developed a callus in 9–10 days, and primary roots appeared in 20 days. In 28 days, they were observed to have matured into ready seedlings. 95 percent of the prepared cuttings rooted in a short time, developing into seedlings. Additionally, 33 seedlings were planted in 3 rows of 11, and their vegetative processes, as well as their morphological, biological, and ecological characteristics, were studied simultaneously.

Section 1.2. Ripening Characteristics in Citrus Plants

Developing and introducing early-ripening, high-yielding grapefruit varieties provides an opportunity to solve the problems facing breeder scientists and specialists. In particular, the early-ripening citrus grapefruit fruit is of high

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quality, which in turn allows the main part of the harvest to be picked in October, giving the shoots strength and an early rest for the next harvest. including the inheritance of the early-ripening trait, which results in a bountiful next-year harvest.

New citrus grapefruit plants are complex organisms, embodying a number of traits. However, combining these traits into a single genotype to create a new variety requires immense and arduous work from breeders and geneticists. In our experiment, the maturity index was studied in newly created citrus grapefruit varieties. The ‘Duragai’ variety exhibited dwarfing effects on plant height compared to the control varieties, particularly the ‘Renesans’ variety, ranging from 0.65 m to 2.35 m, Compared to the “Duncan” variety, it exhibited a shorter height, ranging from 1.7 m to 1.65 m, showing dwarf growth results relative to the control varieties.

Table 1 Hybrid No. 17: Grapefruit – its origins and stages of development over the years.

The origin of the name			
No	Years	Years	Image
1.	2015- 2016	In creating the new grapefruit variety, a bud was taken from the Grapefruit Renaissance III collector variety and grafted onto the lemon F-2 Yubileynaya variety.	
2.	2017	The female flower of the Renaissance 111 cultivar, grown from the graft, was protected and pollinated with the male flower of the F-2 Jubilee cultivar.	
3.	2018- 2021	Comparative studies were carried out on the valuable economic traits of grapefruit varieties and hybrids.	




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4.	2022-2023	In a specialised greenhouse, 33 seedlings of hybrid-2017, arranged in three rows of 11, were planted and their morphological, biological and ecological characteristics during the vegetative stage were studied.	
5.	2024	An application has been submitted to the State Institution 'Intellectual Property Centre' under the Ministry of Justice of the Republic of Uzbekistan for a patent for a new plant variety as a breeding achievement.	
6.	26 December 2025	A patent for the breeding achievement was granted by the State Institution 'Intellectual Property Centre' under the Ministry of Justice of the Republic of Uzbekistan (registered in the State Register of Plant Varieties of the Republic of Uzbekistan on 15 November 2024). No. NAP-594, Application No. NAP-20240070) was obtained. The new variety was named "Uzbekim" grapefruit.	

Conclusion

The grapefruit "O'ZBEKIM", a citrus cultivar developed by the recombination method of breeding, has been characterised for its high yield, disease resistance and early ripening, and is based on the study and analysis of breeding and seed production processes. The grapefruit developed by the cross-breeding method of Uzbekistan's citrus cultivar selection was scientifically and practically validated for its origin, high yield, fruit sweetness and vitamin content.

References

1. Faxriddinov, M. The Unique Trials of Citrus Cultivation. Tashkent. 2014.
2. Faxrutdinov M.Z. Jo'raev S.T. Achievements in Citrus Breeding in Uzbekistan. 'Uzbekiston qishloq va suv xo'jaligi' journal. – Tashkent, 2022. – Special issue. – pp. 30-31.
3. Faxrutdinov M.Z. Jo'raev S.T. Citrus plant breeding in Uzbekistan. Journal of Modern Philosophy Social Sciences and Humanities (January, 2023). – Krakow, Poland, 2023. – Volume 14. – P. 133-140.



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4. Faxrutdinov M.Z., Jo'raev S.T., Rajametova S.Sh. Newly created propagation of citrus seedlings in a short term. BRITISH JOURNAL of Global Ecology and Sustainable Development. Volume-24, January, 2024. – P.143-149.