

Effectiveness of Creating Vitamin-Rich Local Varieties of Lemon

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Abstract:

Abstract: the article talks about the effectiveness of creating local varieties of lemon rich in vitamins.

Keywords: lemon, vitamin, variety, fruit, tolerance characteristics, agrologistics.

LIMONNING VITAMINGA BOY MAHALLIY NAVLARINI YARATISH SAMARADORLIGI

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Annotatsiya: maqolada limonning vitamininga boy mahalliy navlarini yaratish samaradorligi haqida gap borgan.

Kalit so'zlar: limon, vitamin, nav, meva, bardoshlilik xususiyatlari, agrologistika.

INTRODUCTION

"Citrus plants are grown in more than 90 countries around the world today, and the USA, Brazil, Japan, Italy, Argentina, Turkey, Morocco, Mexico and other countries are the leaders in export." In recent years, as a result of the negative consequences of global climate change, it has been observed that the costs of growing citrus fruit plants in open and closed conditions are increasing. This situation has a negative impact on the net income from the product. That is why, by determining the properties of quick ripening and disease tolerance of citrus fruit plants, creating high-yield varieties of citrus fruit plants that ripen in a short period of time, which have the ability to give the main crop before the frost, is an urgent problem.

Today, the total area of lemon groves in our country has exceeded 2,321.0 hectares, and 63,000.0 tons of lemons are grown per year, and the export potential has reached 11,000.0



tons. The average yield from lemon groves is 55-60 tons per hectare. According to the 30th goal of the decree of the President of the Republic of Uzbekistan dated January 28, 2022 No. PF-60 "On the Development Strategy of New Uzbekistan for 2022-2026" "... Development of agrolistics centers and the number of modern laboratories important priority tasks such as the implementation of the national program on reproduction, seed production and seedling production" have been defined. Today, by creating varieties of citrus fruit plants that are quick-ripening, resistant to various diseases and pests, with high yield quality, further expansion of their area, radical improvement of the condition of existing areas, organization of their breeding and cultivation procedures on a scientific basis is before the selection scientists. is one of the main tasks.

Decree of the President of the Republic of Uzbekistan No. PQ-3586 of March 6, 2018 "On measures to further develop the lemon growing industry in the Republic of Uzbekistan", No. PQ-4610 of February 19, 2020 "On further development of the lemon growing industry" "On additional measures" and PQ-55 dated December 20, 2021 "On additional measures to develop family entrepreneurship and expand the source of income of the population" and other decisions These studies serve to a certain extent in the implementation of the tasks defined in the legislative documents.

Research results:

The purpose of the research: to create starting materials for new varieties of lemon from introduced varieties, the main goal of the research is to select grafts suitable for each lemon variety and to create varieties rich in vitamins, high sugar level, fertile and resistant to cold. Task of the research: To achieve the above goals, the following tasks were performed:

- separation of introduced and local varieties and hybrids of lemon according to valuable economic characteristics;
- study of morphological characteristics of introduced lemon varieties;
- selection of suitable cuttings for growing lemon seedlings;
- conduct optimal methods of creating lemon varieties;
- studying the growth dynamics of lemon seedlings.

Research methods: conducting field experiments, planting, phenological observations, biometric measurements, plant care, yield determination. Sources of the Ministry of Agriculture of the Republic of Uzbekistan, the Research Institute of Plant Science of Uzbekistan, the State Commission for Testing Varieties of Agricultural Crops, "Metodika Gosudarstvennogo sortoispitaniya selskohozyaystvennix kultur" , "Methods of Conducting Field Experiments" based on methodological manuals and statistical analysis of the results obtained by B.A. It is performed according to the method indicated by Dospekhov.

Theoretical and practical significance of the research. The theoretical significance of the research is scientifically based on the prospects of using it in selection processes by identifying high-quality, productive, relatively cold-resistant materials from local and introduced varieties and hybrids of mandarin, by determining the correlative relationship between valuable economic traits. development of recommendations, formation of valuable economic signs of lemon and determination of stabilization laws.

The practical significance of the research results is the creation of new genetically enriched

selection materials in lemon using analytical and synthetic selection methods.

Research news. For the first time, scientifically based recommendations on the prospects of use in selection processes were developed by identifying high-quality, productive, relatively cold-resistant materials from among local and introduced varieties and hybrids of lemon, and by determining the correlative relationships between valuable economic traits. The laws of formation and stabilization of valuable economic signs have been determined.

In lemon, using analytical selection methods, new genetically enriched selection materials are created, high-yielding, high-quality relatively cold-resistant selection materials are created and brought to the grade level.

Citrus plants are plants belonging to the subspecies Aurantioideae (naranja) belonging to the Rutaceae family. The natural range of the genus Citrus covers very wide tropical and subtropical regions of Southeast Asia. The origin of citrus plants is complex. Ancient citrus species may have originated by spontaneous hybridization. Somatic mutation, nucellar embryo, natural and artificial selection, which have been carried out during the cultivation of citrus plants for thousands of years, are also important. The most significant development of citrus crop forms and groups is not in China, but in India. However, the formation of new species has its place in both countries, where they are observed not only in wild citrus groves, but also among cultivated crops. The main center of origin of citrus crops is located in Northern India and Northern Burma. 10,100 book collections It is here that the largest number of wild species belonging to the genus Citrus can be found: *C. macroptera* Montr.; *C. latipes* (Hook et Thom.) Tan., *C. aurantifolia* (Christ) Sw., *C. medica* L. (extends westwards to Punjab); *C. grandis* Osb., *C. aurantium* L., *C. sinensis* Osb. etc. (in the Himalayas). Wild forms of *S. Limon* Burm., *C. limetta* Risso, and *C. jambhiri* can be found in the west of the Himalayas up to Punjab. The Indian state of Assam is home to some varieties of sweet and sour oranges, lemons and lemons. According to scientists, the homeland of modern citrus is the southern slopes of the Himalayas, South China and Indochina. Citrus spread to the west from South-West Asia. It is possible that the great Silk Road played a big role in this. Lemons came to Georgia from China and India due to direct trade relations. They appeared in Europe in the 11th century. Sour orange (bigaradiya, naranja) has become especially popular. Thus, the genus Citrus originated and formed mainly from the mainland, only some non-economic species were formed in Indonesia and the Pacific Islands. None of the main types of citrus crops have been found in the wild, so it is difficult to determine the exact centers of origin of citrus. This applies to sour and sweet oranges, tangerines and lemons. The best of them are selected by man and grown in cultural gardens. Among them, the following species are widely cultivated: orange - *C. sinensis* Osb., tangerine - *C. reticulata* Blanco, lemon - *C. limon* Osb., lemon - *C. medica* L., lime - *C. aurantifolia* Sw., grapefruit - *C. paradisi* Macf., pomelo - *C. grandis* Osb. and other economically important species. It has a unique, berry-like fruit, whose representatives are not found in other families, so they are called by a special name, that is, hesperidium. They are formed in the form of wet plants on the inner walls of the leaves of the fruit. Citrus crops include 33 botanical genera, of which three are of economic and practical importance - *Fortunella*,



Poncirus and Citrus. Among these, Poncirus is a small tree, with axillary spines and drooping trifoliolate leaves. The fruits are small, inedible, yellowish-green. It is freely pollinated by species of the genus Citrus. There are many hybrids with Poncirus, among them citrange, citrandarin and others are very popular. They are usually sterile, but can be a good graft.

Lemon is an extremely polymorphic and polygenic species, which includes many pomological groups, but some botanists divide them into separate species. The systematics of Limoni is still controversial. There are 7 main pomological groups of lemons: 1. Unshu lemon - varieties belonging to this group are mainly planted. 2. Blagorodny lemon - (Indian-Chinese-Malaysian group) fruit is the largest, eaten with the peel, the flesh is very tasty. Siam (King of Siam, King), Kunenbo (Uwatimikan), Tsao-sze varieties belong to this group. 3. Sukhoikan, Sino-Mediterranean group; that is, Italian lemon belongs to this group. 4. Tangerines are Chinese varieties whose fruits are orange and sweeter than tangerines. 5. Suntra-ponkana is a group of Sino-Indian varieties with good fruit quality, which includes Ponkan, Suntara, Batangas varieties. 6. Small-fruited lemons include Sino-Japanese varieties with sour fruit (Shivo-mikan). 7. All other varieties containing hybrid forms: Calamandin (Kinkan hybrid with lemon), Rangpur (Hybrid with lemon and lime). plant Tree 37 m, spreading branches (Fig. 28). The branches are thorny, some are thornless. The leaf is thick, light green. Elongated ovoid. The flowers are bisexual, white, fragrant. The fruit is egg-shaped, sometimes round, the average weight is 120 g. The skin is yellow, smooth or rough, smooth. The flesh is 812 layers, light yellow, sour. The juice contains 3.58.1% acid, 1.93.0% acid, vitamin C (45140 mg per 100 g), R za V and pectin substances, iron, phosphorus, potassium, calcium, magnesium salts. It is mainly eaten wet, used in the preparation of confectionery, juice, lemonade, citric acid, essential oil. It is propagated from lemon cuttings and grafting. Lemon grows in spring, summer and autumn, and goes into a dormant period in winter. It blooms in Koklam, the fruit ripens in 150-170 days. In trench conditions, it stops growing when the air temperature drops to 35° in autumn, and continues to grow when the temperature rises to 1012°. Leaves are renewed every 23 years. Lemon is a heat-loving, light-loving and moisture-demanding plant. Fruits and unripe branches are affected by frost at 1.5, 2.5°, and at 5, 6°. It develops normally when the air temperature is 17-18. Lemon gives an abundant harvest in humus-rich, well-draining, light soils. Lemons were grown in trenches in Uzbekistan in 1949. There are Novogruzinsky, Villa Franca, Meyer and other varieties of lemons.

Lemon Citrus reticulata Blanco variety Climintine is an Italian variety, introduced from Georgia. The bush is small pyramidal, the branches are thick, the leaves are thin, the branches are thin. The leaf is small, long, pointed, shiny. The flower is white, small, very fragrant, clustered. The fruit is medium-sized or small, flat spherical, weighing 65-75 g. The skin is orange, thin, almost smooth, with thick fat glands on it, it is easily separated from the flesh, the weight of the skin is 28-30% of the total weight of the fruit. The flesh is orange, grainy, soft, juicy, with a unique smell. Its juice is sour-sweet, it contains 10% sugar, 1% acid, the fruit has up to 20 seeds. The acid content of the juice is 1.02%, sugar content is 8.1%, vitamin C is 44 mg%. Characteristic of the variety - in the sixth year after planting, the yield from one bush reaches 23 kg. 53 67-book Cultivation of citrus fruit plants



Miagawa Vase was introduced from Georgia (VIR selection of Sukhumi subtropical plant experiment station). Tupi is short. The bush is smaller, 1.5-2.0 meters tall. The trunk is compact, the branches are short, serbarg. The leaf is medium-sized, round-oval in shape, the base is round, the edges are slightly bumpy, dark green in color, and there are small wings on the leaf band. The flower is white, small, very fragrant, clustered. The fruits are medium-sized, round in shape, weighing 80-100 grams. The skin is thick, yellow, and does not separate easily from the flesh. The juice contains 1.4% various acids, 7.2% sugar, 44 mg/% vitamin C. The characteristic of the variety is that it yields in the second year after planting in greenhouse conditions. In the fourth year, each bush yields 5-6 kg and more. 54 100 book collection Kavano vase Georgia (selection of the Sukhumi Subtropical Plant Experiment Station VIR) variety, low bush. The bush is smaller, the branches are compact. It reaches 1.5-2.0 meters in height. Branches are short, serbarg. The flower is white, small, very fragrant, clustered. The fruit is round, medium-sized, weighing 120-140 g. The skin is light yellow, the taste is sour-sweet. Its juice contains 0.6-0.8% acid, 6.5-7.0% sugar, 15-20 mg% vitamin C. Variety feature - 6-5 years after planting, some bushes can yield up to 12-15 kilograms. 55 67-book Cultivation of citrus fruit plants "Ponkan" variety - wild forms are found in India. The bush is tall, pyramidal, its branches grow upright, its height reaches 2.5-3 meters. The branches are covered with long, medium-sized leaves. The leaf is oval-long - 9 cm, the base is round, the edges are slightly bumpy. The flower is white, small, very fragrant, clustered. The fruit is large, the base is round, it weighs 100-110 grams. The skin is light yellow, easily separated from the flesh, the taste is sweet and sour. The seed is 8-12 multi-lobed. The juice contains 0.7-0.8% acid, 7.0-8.5% sugar, 15-20 mg% vitamin C. Variety feature - after planting, 5-6 individual bushes can yield up to 12 kg. Solitude is observed. Vigorous trees are resistant to -7-8 °C, lasting until April, and the duration of flowering was 15 days, while the beginning and end of this phase was observed in the Ranni spelli variety between April 17-29, and the duration of flowering was 13 days. It was observed that the duration of the flowering period is 16 days, starting from April 21 and ending on May 6, in Clementine variety.

Transition of phenological phases in varieties of introduced citrus plants (2022) 1-table

№	Citrus	The beginning of the growth of buds	Beginning of the budding period	Flowering			The second growth period		
				Beginning	the end	Continuity	Beginnin g	the end	Continuity
Lemon									
1	Criterion	14.03	22.03	08.04	25.04	17	06.05	16.06	46
2	Uzbekistan is a harvester	15.03	25.03	09.04	23.04	14	11.05	19.06	38
3	The first-born of Uzbekistan	16.03	26.04	11.04	28.04	18	10.05	15.06	35

In lemon cultivars, the beginning of the second growth stage lasted for 34 days, starting from May 15 to June 17, in Rannii spelled cultivar, and 23 days in Clementine cultivar, lasting from May 20 to June 11. In the rest Kawano Vase, Ponkan, Chimera, the beginning of the second growth period started between May 16-18 and lasted until June 7-



13, the duration of this phase was 26 days in Kawano Vase, 28 days in Ponkan, and 27 days in Chimera. it was observed that it constituted the day.

CONCLUSIONS

1. Selections were made for the purpose of creating new fast-ripening, fruitful, disease-resistant, high-quality selection materials suitable for the republic's soil and climate conditions using samples of the introduced lemon varieties "Clementine", "Kavano Vase", "Okitsu Vase", "Ponkan".
2. As a result of all phenological observations in order to carry out selection processes in the lemon plant, it was observed that the beginning of the phenological phases in 3 lemon and 5 mandarin varieties was between March 14-20, and the beginning of flowering was from April 8 to April 24. The duration of flowering was 12 to 18 days. In varieties, the second growth period began on May 6 and lasted until June 20, the duration of this phase was 23-46 days.
3. Ripening of lemon fruits was noted in Kovano Vase and Chimera varieties from October 4-5, and in Ponkan fruits from November 4 at the latest. The duration of ripening in all studied lemon varieties was the same 33-34 days.
4. Introduced varieties and local varieties of lemon were separated according to valuable economic characteristics;
5. Among the mandarin varieties studied above, the highest yield was 75 s/ha in the Ponkan variety, while the lowest yield was 48.5 s/ha in the Klimintin variety.

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