



CULTIVATION OF HIGH-QUALITY ELITE SEEDS FROM THE LOCAL SHIRIN VARIETY OF WATERMELON

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Article history:	Abstract:
Received: 28 th July 2023 Accepted: 26 th August 2023 Published: 30 th September 2023	In our country, information on the establishment of primary seed production of the first created medium-sized Shirin variety belonging to the Crimson sweet type of watermelon is presented. 10 kg of original, 41 kg of elite and 32 kg of 1st generation seeds were prepared from Shirin variety of watermelon. The quality of seeds fully meets the requirements of the state standard QzDSt 2823:2014
Keywords: watermelon, variety, primary seed production, fertility, selection density, seed, original, elite	

INTRODUCTION. As a result of the fundamental reform of the multi-sectoral agriculture, which plays an important role in the economy of Uzbekistan, in the years of independence, it is possible to fully satisfy the needs of the population for agricultural products. But, despite this, life itself shows that it is necessary to organize the work on the selection and seed production of polys crops more effectively. Therefore, it is very important to create varieties and hybrids that meet the needs of the scientific-based selection of rice crops, as well as to introduce them into production by starting their seed production.

Watermelons of Uzbekistan are distinguished by their quality indicators, high sugar content, aroma, variety. There are early, mid-ripening, late-ripening and long-term varieties of watermelon. These varieties are in great demand in the domestic and foreign markets.

In 2022-2023, 150,000-155,000 hectares of land were allocated to field crops in Uzbekistan, of which 69,000 hectares were allocated to watermelon.

In Uzbekistan, it is necessary to solve the current scientific problems, such as the organization of primary seed production, in order to increase the volume of production and export of polys products.

Based on the demand of the population, the "Shirin" variety of watermelon, competing with foreign hybrids of the red dessert type, was created and entered into the State Register.

Planting fertile varieties suitable for soil and climate conditions, resistant to diseases and extreme unfavorable conditions, with original and elite seeds prepared on the basis of individual selection, increases the productivity of field crops by 15-20% without excessive expenditure and ensures the cultivation of quality products.

STUDY LOCATION AND METHODS. The researches were carried out at the experimental field of the Tashkent Research Institute of Vegetable, Rice Crops and Potatoes and at its Andijan and Samarkand scientific experimental stations.

Primary seed production was carried out on the basis of the following methodological manuals: "Regulation on the procedure for approving agricultural crops in areas planted for seeds" (2021), "Instructions for approving seed areas of vegetable and leguminous crops" (2020).), "Regulation of approval of vegetables and leguminous crops" (2020). Guide to growing elite seeds" (2020), "Recommendations on the technology of growing seeds of vegetable and fruit crops" (2019).

EXPERIMENT RESULTS.

In order to preserve the fertility characteristics of seeds, at all stages of seed production, seeds and seeds were selected from fertile, variety-specific plants by the method of individual selection.

The quality of the seeds was evaluated according to parameters such as variety purity, seed purity, germination ability and degree of germination, weight of 1000 seeds.

About 50 selections were studied in the garden of individual selections of watermelon's "Shirin" navigation. The average fruit ripening time of 85 days in all individual selections of Shirin New was equal to or superior to the option delivered with elite seeds.

According to the results of selected biometric measurements, the average length of the stem of the "Shirin" variety is 252 cm, and the longest is 263-275 cm. The average length of side branches was 639 cm, the longest was 833-1010 cm, and the shortest was 508-547 cm. The average length of palaks was 891 cm, the longest was 943-1293 cm. The number of lateral branches was on average 3.8 units, and this indicator varied from 3 to 5 in the selections. The total

length of the main stem, lateral branches and lateral branches and the number of lateral branches of a separate selection of Shirin variety showed slightly higher values compared to those planted with elite seeds.

All individual selections planted with Shirin variety were evaluated for morphological characters in the field. New single selections were obtained to increase productivity from selections with high plant development and fruit yield. From 14 high-yielding, well-developed selections, 56 new single selections were prepared. The average weight of the fruit of 56 individual selections from the sweet variety was 5.2 kg, the largest was 8.6 kg.

The shape of the fruit of the sweet variety is spherical, and the index is equal to 1.1. The peel of the fruit is thin, on average 1.1 cm. The flesh of the fruit is dark pink, very sweet, the amount of soluble dry matter is on average 11.7%, the sweetest ones are up to 13%.

Table 1

Indicators of economic characteristics of individual selections of Shirin variety of watermelon, 2022

Choices	The number of single selections received, pcs	Fruit weight, kg		Fruit index	Thickness of skin, cm	Soluble dry matter content, %	
		average	highest			average	highest
Elite		5,0	5,9	1,1	1,2	11,2	12,0
1	6	4,8	5,6	1,1	1,0	12,0	13,0
2	3	5,2	6,2	1,1	1,1	11,5	12,0
6	5	5,6	7,0	1,1	0,9	11,7	12,0
8	3	4,9	5,6	1,0	0,9	11,7	12,0
9	3	5,1	5,5	1,1	1,1	11,7	12,0
10	5	5,6	6,9	1,1	1,2	11,9	12,5
14	4	5,0	7,2	1,1	1,2	11,5	12,0
15	2	5,6	6,3	1,1	1,2	11,7	12,0
18	5	5,1	6,7	1,1	1,1	12,1	13,0
19	6	5,1	5,9	1,1	1,0	11,7	13,0
20	7	5,2	6,3	1,1	1,0	11,7	12,0
33	4	5,7	8,6	1,1	1,0	11,5	12,0
34	2	5,3	5,6	1,1	1,1	11,5	12,0
36	1	5,0	5,0	1,1	1,0	11,5	11,5
By type	56	5,2	8,6	1,1	1,1	11,7	13,0

UNIQUE AND ELITE CULTIVATION OF THE "SHIRIN" VARIETY OF WATERMELON.

Super elite seeds of the Shirin variety were planted on 2 hectares at the Andijan scientific experimental station of the institute and 0.5 hectares at the Tashkent experimental site.

The Shirin variety planted in the experimental plot of Tashkent was cleaned 3 times on an area of 0.5 hectares. The first cultivar treatment is carried out in the greenhouse at the stage of growing the seedlings in pots before taking them to the field, the second at the stage of flowering of the mother flowers and the third at the stage of fruiting. A total of 20 plants, specifically those that were excluded from the variety and diseased, were uprooted in the process of variety cleaning.

The Shirin variety planted in the Andijan scientific experiment station was purified 3 times on an area of 2.0 hectares. A total of 40 plants, specifically those that were excluded from the variety and diseased, were uprooted in the process of variety cleaning.

In order to determine the fertility of the variety in the seed areas, approval works were carried out and the fertility was determined. In this case, the fruits and seeds of the variety were transferred at the time of full biological maturity. In the field, the numbers were divided step by step along the diagonal of the seed plots, divided into 4 parts from points located at equal distances, and 50 samples were taken from each part. The plants in these samples were divided into two groups. For the first group, plants with varietal characteristics and valuable for the economy were selected. In the second group, plants that did not develop or did not grow and were damaged were separated. The number of out-of-species plants in each sample was determined, recorded in the approval book, and the quality was determined.

According to the results of the approval, the yield of the super super elite seed of the Shirin variety in 0.1 hectare area in 2022 at the experimental plot of Tashkent was 100%, and no deviations from the variety were detected. The yield of original and elite seeds of Shirin variety on 0.5 ha area was 99.5%, and the deviations from the variety were 0.5%.

According to the results of the approval, the yield of Shirin variety seeds on 1 hectare planted from the original seed at the Andijan scientific experimental station was 99.5% of the original and elite seed, and 0.5% of the deviations from the variety.

5% original, 35% elite and 40% 1st generation seeds were prepared from the crop grown from the original seeded fields using the method of selection from the seed plots.

10 kg of original, 41 kg of elite and 32 kg of 1st generation seeds were prepared from Shirin variety according to the rules of scientific seed production. The quality of the seeds prepared from the sweet variety was analyzed in the seed laboratory of the institute. The quality of seeds fully meets the requirements of the state standard QzDSt 2823:2014. The weight of 1000 seeds of the grown original and elite generation is 45.1-47.2 g, 1st generation is 39.5 g. Fertility is 93.4% in the original seeds, 92.5% in the elite generation and 91.0% in the 1st generation, which meets the standard requirements.

CONCLUSIONS. Primary seed breeding of the Shirin variety of watermelon was carried out on a scientific basis at the Scientific Research Institute of Vegetables, Fruit Crops and Potatoes. In the experimental plot of Tashkent, the yield of the super super elite seed of the Shirin variety was 100%, the yield of the original and elite seed was 99.5%, and the deviations from the variety were 0.5%.

At the Andijan scientific experiment station, the original and elite seed yield of the Shirin variety was 99.5%, and the deviations from the variety were 0.5%.

10 kg of original, 41 kg of elite and 32 kg of 1st generation seeds were prepared from Shirin variety. The quality of seeds fully meets the requirements of the state standard QzDSt 2823:2014

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