AGRONOMIC CHARACTERISTICS OF ONION VARIETIES BASED ON MARKETABILITY TRAITS

Khurramov Ulugbek Kholmamatovich
Tashkent State Agrarian University, Department of "Vegetable Growing and Greenhouse Farming Organization," Professor, Doctor of Agricultural Science,
sabkonf-22@mail.ru
Karimov Jamshid Ochilovich
Tashkent State Agrarian University, Department of "Vegetable Growing and Greenhouse Farming Organization," Senior Lecturer, PhD in Agricultural Sciences
Hayitbayev Doniyor Komiljon o'g'li
Institute of Agriculture and Agrotechnologies of Karakalpakstan, Department of "Fruit Growing, Vegetable Growing and Melon Growing," Independent Researcher

MAQOLA MALUMOTI

MAQOLA TARIXI:
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ANNOTATSIYA:

More than 32 varieties of onions from the world collection were studied in the soil and climatic conditions of the Republic of Karakalpakstan. According to the research results, commercially valuable traits were identified in 10 varietal samples that showed results higher than the standard variety "Kaba-132" (90%) in terms of the share of marketable products.

In particular, in the varieties k-194 "nameless," k-10 "Kind Variety," and k-50 "Super Bear," the share of high-quality products was 91-92%, which is 1-2% higher than the standard variety. Also, in the varieties k-205 " nameless," k-40 "Roket," k-43 "Spring Onion," k-75 "Prince-33," k-85 "K-3" and k-95 " nameless," this indicator was 93-94%, which is 3-4% higher than the standard.

The highest result was observed in the variety sample k-80 "K-13," the share of marketable (quality) product of which was 95%. The research results clearly indicate that this indicator is 5% higher than the standard variety "Kaba-132.".

Introduction. A variety is not a specific botanical-systematic unit within a species, but a practical concept with economic meaning. A variety is a collection of plants created by

humans, cultivated in certain natural and climatic conditions, possessing valuable economic properties based on biological and morphological characteristics.

Consequently, the nature of varieties in different crops is unique, and their biological and economic aspects differ from each other. At the same time, common characteristics are also common to all varieties. First of all, the variety is of great importance as one of the main factors of agricultural production. The biological properties of the plant allow for its successful cultivation in a specific climatic zone. The timing of harvesting and the quality of the product largely depend on the variety factor.

As a result of introducing new, high-yielding varieties into the production process, there is an opportunity to significantly increase yield without increasing additional production costs, as well as to improve the quality of the products obtained. Studies show that the effectiveness of regular variety renewal is high, and the yield increases by 10-30% compared to older varieties.

Varieties and hybrids are the main source of stable and high yields of vegetable crops. The share of this factor in increasing yields is 30-60%, and this indicator is expected to increase further in the future [1].

For example, onions of the "Rawska" and "Blonska" varieties, with diameters of 5-10, 11-15, 16-20, and 21-25 mm, were kept at 0-1°C and 18-20°C until sowing in the field. According to the research results, bulbs with diameters of 16-20 and 21-25 mm tended to produce flower stalks. When onions of the same size were stored at a temperature of 0-1 °C, the degree of flower stalk emergence was higher than when stored at a temperature of 18-20 °C [2].

Experimental setup and methods. In the experiments, varieties of the onion collection were tested by sowing seeds early in 2017-2018. In the study of varietal samples, 10 varieties with a high yield of onions imported from abroad were tested.

Field experiments were conducted in 2 replications on an area of 7 m2, and the Kaba-132 variety was used as a standard. [3]; [4].

Results of the experiment. As is known, the main goal of agricultural production is to ensure food security and increase the volume of marketable products. Soil and climatic conditions, agrotechnical measures, and the biological characteristics of the variety greatly influence the quality of the harvested crop.

In terms of the amount of marketable product of onions, 10 of the studied 31 collected varieties outperformed the standard variety - k-58 "Kaba-132, St" (90%). In particular, in the varieties k-194 " nameless," k-10 "Kind Variety," and k-50 "Super Bear," the share of high-quality products was 91-92%, which is 1-2% higher than the standard. Also, in the varieties k-205 " nameless," k-40 "Roket," k-43 "Spring Onion," k-75 "Prince-33," k-85 "K-3" and k-95 " nameless," this indicator was 93-94%, which is 3-4% higher than the standard. The highest indicator was noted in the k-80 "K-13" variety sample - its share of high-quality products was 95%, which is 5% more than the standard variety.

In the standard variety "Kaba-132, St," the total yield was 35 tons per hectare. As a result of the comparative analysis, it was established that the yield of varieties k-194 " nameless," k-10 "Kind Variety," k-205 " nameless," k-40 "Roket," k-43 "Spring Onion," k-50 "Super Bear," k-75 "Prince-33," k-80 "K-13" and k-95 " nameless " was 2.3-13.8 t/ha or 6.5-39.4% lower compared to the standard variety.

Only the collection sample k-85 "K-3" yielded 43.2 t/ha, which is 8.2 t/ha or 23.4% higher than the standard variety, and reliably distinguished itself with an effective yield indicator.

The yield also depended on the number of seedlings and the weight of the bulb. In the standard k-58 "Kaba-132, St" variety, the bulk weight of the onion was 120 g.

The bulb weight of onion samples was higher in the k-205 " nameless " and k-85 "K-3" varieties compared to the standard variety. In these varieties, the average bulb weight was 130-145 g and compared to the standard variety k-58 "Kaba-132, St," bulbs were formed by 10-25 g or 8.2-20.8%. The onion heads formed by the remaining varieties k-194 " nameless," k-10 "Kind Variety," k-40 "Roket," k-43 "Spring Onion," k-50 "Super Bear," k-75 "Prince-33," k-80 "K-13," k-95 " nameless " were in the range of 70-110 g.

According to the results of calculating the duration of the growing season of the collected onion variety samples, the period from seedling emergence to harvest significantly differed compared to the standard variety "Kaba-132, St" (155 days).

The Japanese sample k-50 "Super Bear" stood out as an early-ripening variety - its growing season was 115 days. Also, in the Dutch samples k-75 "Prince-33" and k-85 "K-3," this indicator was 120-125 days, in the US collection variety samples k-40 "Roket," k-43 "Spring Onion" of the Netherlands, and k-80 "K-13" of Korea - 130-135 days. The growing season of the Kazakh variety k-194 " nameless " and the Kyrgyz variety k-10 "Kind Variety" was 140 days.

These results show that these varieties are 15-40 days earlier than the standard variety. At the same time, it was established that the collection variety samples k-205 "Nomsiz" from Kyrgyzstan and k-95 " nameless " from Holland are 5-10 days later than the standard variety with a growing period of 160-165 days.

According to the results of the analysis of leaf length, it was established that all varieties of the world collection, distinguished by a high yield, exceeded the standard variety "Kaba-132, St" by 18 cm.

In particular, in the varieties k-194 " nameless," k-10 "Kind Variety," k-205 " nameless," k-40 "Roket," k-43 "Spring Onion," k-50 "Super Bear," k-75 "Prince-33," k-85 "K-3," k-80 "K-13" and k-95 " nameless," the average leaf length was 24-46 cm. This indicates the formation of 6-28 cm or 33.3-155% longer leaves compared to the standard variety.

1-table

Indicators of the quality yield of the world onion collection (2017-2018).

Catalogue number	Country of origin	Variety names of the World Collection	Variety characteristics						
			Number of leaves, pieces	Leaf length, cm	Leaf color	Growing period, days	Bulb weight, g	Total yield, t/ha	Marketable yield, %
k- 58	Uzbekistan	Kaba-132, St	12	18	Green	155	120	35	90
K-194	Kazakhstan	nameless	13	26	Dark green	140	110	27	91
K-10	The Republic of Kyrgyz	Kind Variety	14	35	Fluffy-covered	140	90	21,2	92
K-205	The Republic of Kyrgyz	nameless	18	36	Green	160	130	26	93
K-40	USA	Roket	15	33	From green to dark green	130	100	24,3	93
K-43	Netherland	Spring Onion	8	24	Fluffy-covered	135	110	25,1	94
K-50	Japan	Super Bear	12	36	Light green	115	70	21,6	91
K-75	Netherland	Prince-33	14	36	Light green	120	80	23,4	93
K-85	Korea	K-3	12	37	Fluffy-covered	125	145	43,2	93
k- 80	Korea	K-13	12	36	Green	130	100	26,2	95
k- 95	Netherland	nameless	6	46	Green	165	110	32,7	93
NSR_{05}			**0,56**	**1,37**		**2,50**	**2,44**	**1,16**	
Sx%			**4,53**	**4,16**		**3,99**	**4,20**	**4,16**	

When analysing the number of leaves formed in the variety samples before harvesting, it was established that the standard variety "Kaba-132, St" has an average of 12 leaves.

Variety samples k-194 " nameless," k-10 "Kind Variety," k-205 " nameless," k-40 "Roket," and k-75 "Prince-33," superior in terms of marketability, formed 1-6 leaves or 7.6-46% more than the standard variety.

At the same time, it was noted that the number of leaves in the k-43 "Spring Onion" and k-95 " nameless " variety samples was 4-6 fewer than in the standard variety. In the remaining collected varieties k-50 "Super Bear," k-85 "K-3" and k-80 "K-13," the number of leaves was 12, which is practically the same as the standard variety.

Conclusion. According to the marketability indicator, 10 varietal samples were selected from the collected varietal samples of onions. These are: k-194 " nameless," k-10 "Kind Variety," k-50 "Super Bear," k-205 " nameless," k-40 "Roket," k-43 "Spring Onion," k-75 "Prince-33," k-85 "K-3," k-95 " nameless " and k-80 "K-13." According to the data obtained, the amount of marketable product of these varieties ranged from 91% to 95, which is 1% to 5% higher than the standard variety "Kaba-132." This indicates their market advantage and prospects for practical application.

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