

Selection Of Promising Broccoli Varieties Suitable For The Conditions Of Southern Uzbekistan

Nurmatov N. J. - Head of the Department of Chemistry and Biology, Termez State Pedagogical Institute, Ph.D.

Musayeva D. - Master's student at Termez State Pedagogical Institute

Annotation. The article presents the results of studies conducted to select promising varieties of broccoli suitable for the conditions of southern Uzbekistan. Promising samples are identified by the duration of the fruiting period and overall yield.

Key words. Broccoli, hybrid, comparative grade, productivity, varietal specimens.

In recent years, the demand for broccoli has been increasing worldwide. In 2024, China was the world leader in broccoli production (10.7 million tons), followed by India (8.8 million tons), the United States (1.3 million tons) and Spain (0.7 million tons). (<https://worldpopulationreview.com/country-rankings/broccoli-production-by-country>).

Broccoli is also becoming popular in our republic. In order to sustainably ensure the demand for broccoli in the Uzbek market, this type of cabbage was planted on 1.3 thousand hectares of land in 2022. The export volume of broccoli is also increasing year by year. In particular, in 2020, 3,000 tons of broccoli were exported, while in 2021 this figure doubled to 6,000 tons. (<https://e-cis.info/news/567/99213/>).

According to A.V. Konstantinovich (<http://elib.timacad.ru/dl/full/sbagro-2021-197.pdf/download/sbagro-2021-197.pdf>). In 2019, imports of all types of cabbage to the Russian Federation amounted to 165.1 thousand tons, an increase of 19.9% or 27.5 thousand tons compared to 2018. Including, imports of cauliflower and broccoli amounted to 23.4 thousand tons, of which 47.3% were from China, 18.4% from Uzbekistan, 15.3% from Iran, 6.2% from Belarus, 6.0% from Kazakhstan and 6.8% from other countries.

The State Register of Agricultural Crops Recommended for Cultivation in the Republic of Uzbekistan (2022) includes the following hybrids of broccoli safflower: F1 Naxos, F1 Agassi, F1 Ironman, F1 Atlantis, F1 Heraklion, F1 Quinta, F1 Marathon, F1 Tiburon, F1 Fiesta.

8 varieties of broccoli were selected as the object of research (Table 1).

In the experiment, each variety was planted in a 70x40 cm pattern. Sowing date

August 5. For comparison of varieties, the F1 Naxos hybrid, zoned in our republic, was taken as a comparative variety.

The research was conducted based on the following methods and methodological guidelines:

- Methodology of field experiments in vegetable growing (ed. Litvinova S.S. M., 2011);
 - Methodology of experiments in vegetable growing, melon growing and potato growing (Azimov B.J., Azimov B.B., 2002),
 - Methodological guidelines for ecological testing of vegetable crops in open ground (M., VNISSOK, 1987).
- Mathematical and statistical analysis of the results obtained in field experiments was performed using the Microsoft Excel program using the method of B.A. Dospekhov (1985).

1-Table

A collection of studied broccoli cultivars

№	Crop type	Name of the species	Name of the species
1.	Broccoli cabbage	F ₁ Naksos	Japan
2.	Broccoli cabbage	Fabrika zdorovya	Russia
3.	Broccoli cabbage	Linda	Czech Republic
4.	Broccoli cabbage	Istochnik sily	Russia
5.	Broccoli cabbage	Tonus	Russia
6.	Broccoli cabbage	F ₁ Monako	Netherlands
7.	Broccoli cabbage	F ₁ Manklana	Belarus
8.	Broccoli cabbage	F ₁ Bataviya	Italy

When calculating the average weight of cabbages in the studied variety samples, the average weight of the comparative F1 Naxos hybrid cabbages was 474.4 grams. Also, when comparing the average weight of cabbages of the variety samples with the comparative variety, the F1 Monaco hybrid was

492.9 grams, the Fabrika Zvyozd variety was

548.2 grams, and the F1 Batavia hybrid was

581.2 grams, respectively, higher by 3.9-22.5 percent. (Table 2).

When calculating the yield indicators of the studied variety samples, it was found that the high or low yield depends on the average weight of cabbages. The highest total yield was recorded in the F1 Monaco, F1 Batavia hybrids and the Fabrika zvyozd variety, the total yield of these variety samples was 26.7-30.2 tons per hectare, which was 5.1-34.8% higher than the reference variety.

2-table

Head weight indicators of broccoli cabbage varieties, g (2023-2024 yy.)

Samples	Average weight of cabbage, grams	Compared to the comparative variety, %	Total yield, t/ha	Compared to the comparative variety, %
F ₁ Naksos q.n.	474,4	100	25,4	100
Fabrika zdorovya	548,2	115,5	28,2	111,0
Linda	342,4	72,2	21,1	83,1
Istochnik sily	421,2	88,8	22,6	89,0
Tonus	250,1	52,7	19,3	76,0
F ₁ Monako	492,9	103,9	26,7	105,1
F ₁ Manklana	373,4	78,7	23,2	91,3
F ₁ Bataviya	581,2	122,5	30,2	134,8

When studying the length of the fruiting period, it was observed that the F1 Naxos hybrid, taken as a comparative variety, varied from 81 to 85 days, the Fabrika zdorovya variety from 80 to 83 days, the Linda variety from 82 to 84 days, the Istochnik sily and Tonus varieties from 81 to 86 days, the F1 Monaco and F1 Batavia hybrids from 80 to 86 days, and the F1 Manklana hybrid from 81 to 87 days. The results of the studies showed that the Linda, Istochnik sily, Tonus varieties and the F1 Manklana hybrid had lower indicators in terms of weight and yield of cabbage compared to the F1 Naxos hybrid, taken as a comparative variety. The Fabrika zdorovya variety and the F1 Monaco and F1 Batavia hybrids had the highest indicators in terms of weight and total yield of cabbage. These variety samples serve as a valuable starting source for broccoli breeding in the conditions of southern Uzbekistan.

References

1. Azimov B.J., Azimov B.B., Sabzavotchilik, polizchilik va kartoshkachilikda tajribalar o'tkazish metodikasi. – T. 2002. – B. 176-178.
2. Dospexov B.A. Metodika polevogo opyta, 5-e izd-e, M.: Agropromizdat, 1985. - 351 s.
3. Metodika polevoga opyta v ovoshevodstve (pod red. Litvinova S.S.) – M., 2011. – 648 s.
4. Metodicheskiye ukazaniya po ekologicheskomu ispytaniyu ovohnyx kultur v otkrytom grunte M. - VNISSOK. – 1987. – Cast I. -123 s.
5. <https://worldpopulationreview.com/country-rankings/broccoli-production-by-country>.
6. <https://e-cis.info/news/567/99213/>.
7. <http://elib.timacad.ru/dl/full/sbagro-2021-197.pdf/download/sbagro-2021-197.pdf>.