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Cultivation of Local and Introduced Varieties of Batata in Conditions of Tashkent Region

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Abstract:

The scientific article records the results obtained from the study of seedlings obtained from Batata seed pieces of different weights, the appearance of the first shoots and the stability of seedlings planted in open ground. When planting seedlings in the first ten days of May, we observed that their stability, stem growth above the ground, and the level of lateral branches and leaves showed higher results compared to the control. Based on scientific research, we can say that in the conditions of the Tashkent region it is appropriate to plant Batata seedlings in the first ten days of May.

Keywords: *Batata (sweet potato), tuber, seedlings, sowing time, resistance, stem, temperature, humidity.*

Introduction

Batata is cultivated as a staple food crop in tropical and subtropical countries of the world such as China, Malawi, Tanzania, Nigeria, Indonesia, India, Japan, Korea, USA, Mexico, Congo and Uganda. Although Batata is a new crop in our country, efforts are being made to create varieties suitable for the soil and climatic conditions of different regions, to cultivate them and to develop agrotechnologies.

Batata or sweet potato is very valuable, it is valued for its medicinal and dietary properties, and it is eaten boiled, fried and baked just like potatoes. At the same time, it is widely used in the canning industry, in the production of confectionery products, as well as in the production of alcohol and starch. Its ripe fruit contains up to 6% sugar, up to 32% starch. Batata flour is partially used in baking bread. In addition, Batata is used as fodder in cattle breeding. There is a lack of information based on a perfect study of optimal planting dates, methods and cultivation technologies for this crop. The study of these issues is of theoretical and practical importance in the field of vegetable growing. Batata variety samples were evaluated according to morphobiological and economic characteristics. A field experiment was conducted on the cultivation technology and breeding methods of local and foreign varieties of Batata. In the Decree of the President of the Republic of

Uzbekistan dated January 28, 2020 PP-4575 "On measures to implement in 2020 the tasks defined in the" Strategy for the development of agriculture of the Republic of Uzbekistan for 2020 - 2030 years" the prospects of development of the sector and issues of expanding new types of plants by developing fruit and vegetable growing in our republic have been defined. Today, in our republic, great attention is being paid to growing non-traditional and rare vegetable crops, expanding the range of vegetables in our markets, satisfying the population's demand for various vegetables and ensuring food safety, and growing ecologically clean products rich in vitamins.

The experiment aims to study the vegetative and generative stages of growth and development of some varieties of Batata introduced from local and foreign countries, including Sochakinur, Toyloqi, Fillial, Khazina, Guldu, Japanese, Burgundi, Belvu, Tata-kato, Spartak, in the conditions of the Tashkent region. It is known that the crop of Batata plant is grown through whole plants separated from the tubers. However, the output of propagation in this method is low, because on average 25-45 whole plants are obtained from one Batata tuber. From the end of the first decade of March, it is planned to take seedlings from the tubers and plant them in the open field according to the established planting dates.

Table 1. Phenological observations of tuber fertility in the cultivation of Batata seedlings (2024)

№	Tuber varieties	Tuber weight (piece)	Planting periods (dates)	Emergence of new shoots (dates)	Number of stems	Number of seedlings from one tuber (total) until 10.05.2024
1	Sochakinur	150	10.03.2024	20.04.2024	8	30
2	Khazina (st)	90	10.03.2024	25.04.2024	5	45
3	Toyloqi	110	10.03.2024	20.04.2024	7	61
4	Guldu	130	10.03.2024	26.04.2024	6	40
5	Fillial	120	10.03.2024	28.04.2024	4	25
6	Japanese purple	135	10.03.2024	05.04.2024	7	65
7	Belvu	120	10.03.2024	05.04.2024	3	55
8	Spartak	110	10.03.2024	08.04.2024	5	48
9	Japanese	80	10.03.2024	05.04.2024	6	55
10	Burgundi	90	10.03.2024	08.04.2024	4	24
11	Tata-kato	130	10.03.2024	12.05.2024	2	5

Experiments have shown that the weight of tubers is important in the cultivation of Batata seedlings, and we observed that the weight of the tubers is less, that is, 60-90 grams, depending on the variety, the first sprouts appear faster. As noted in the table, these indicators showed that there is a certain difference between varieties. Among the varieties with the highest field retention, Toyloqi, Sochakinur, Japanese purple, Belvu, Japanese, Spartak varieties had 100% field retention in our experiments. At the same time, 96% of Toyloqi variety, 98% of Khazina variety, 100% of Japanese purple, 96% of Belvu, and 96% of Spartak were observed. From this, it can be said that during our research it was found that the planting period of 30-day-old Batata seedlings in the open field is directly related to their field resistance. At the same time, it was observed during our experiments that when the seedlings were planted on the 10th of May, in addition to their field resistance, the rapid growth of branches, the size of the leaf surface and other characteristics showed a positive result compared to the control option. However, the yield in propagation in this method is low, because on average, 25-45 whole plants are obtained from one Batata tuber.

Planting seedlings in three parts (bottom, middle and top) increases the yield of seedlings three times. If the planted seedlings are planted again in parts, the number of seedlings will increase several times. But due to the fact that the quality of the cuttings taken from different parts of the plant is different, the rooting, growth, development and emergence of the cuttings will be different.

Biometric measurements of number of stems, total length of stems and surface area of Batat variety samples (2024)

Table 2

Biometric measurements of local and introduced variety samples of Batata planted on 10.05.2024									
№	Varieties name								
	Sochakinur					Japanese purple			
	planting methods	main stem length (cm)	lateral branches (piece)	the number of leaves (piece)	№	planting methods	main stem length (cm)	lateral branches (piece)	the number of leaves (piece)
1	seedlings	150	6	22	1	seedlings	250	12	26
2	seedlings	90	4	18	2	seedlings	180	7	13
3	seedlings	104	5	17	3	seedlings	175	8	14
4	seedlings	86	5	21	4	seedlings	150	6	18
5	seedlings	137	6	22	5	seedlings	160	6	12
6	Total	567	26	100	6	Total	915	39	83
Toyloqi						Belvu			
1	seedlings	120	4	24	1	seedlings	250	4	16
2	seedlings	90	6	21	2	seedlings	220	3	13
3	seedlings	85	7	19	3	seedlings	150	5	12
4	seedlings	76	5	18	4	seedlings	280	3	10
5	seedlings	64	5	16	5	seedlings	240	4	8
6	Total	435	27	98	6	Total	1.200	19	58
Khazina						Spartak			
1	seedlings	120	7	22	1	seedlings	140	8	16
2	seedlings	95	6	19	2	seedlings	120	8	12
3	seedlings	110	6	20	3	seedlings	112	7	14
4	seedlings	112	6	17	4	seedlings	90	6	12
5	seedlings	132	5	18	5	seedlings	137	7	13
6	Total	596	30	96	6	Total	599	36	67
Guldu						Japanese			
1	seedlings	85	5	18	1	seedlings	150	8	18
2	seedlings	60	3	16	2	seedlings	125	6	15
3	seedlings	72	4	17	3	seedlings	118	7	12
4	seedlings	58	4	15	4	seedlings	140	5	14
5	seedlings	69	5	16	5	seedlings	125	6	12
6	Total	344	21	82	6	Total	658	32	71
Fillial						Burgundi			
1	seedlings	59	4	18	1	seedlings	124	4	15
2	seedlings	45	3	16	2	seedlings	100	3	10
3	seedlings	62	4	14	3	seedlings	95	3	12
4	seedlings	48	2	15	4	seedlings	80	4	13

5	**seedlings**	**71**	**3**	**12**	**5**	**seedlings**	**76**	**3**	**12**
6	**Total**	**285**	**16**	**75**	**6**	**Total**	**475**	**18**	**62**
Tata-kato									
1	**seedlings**	**52**	**3**	**8**	**4**	**seedlings**	**28**	**4**	**8**
2	**seedlings**	**40**	**4**	**7**	**5**	**seedlings**	**28**	**3**	**8**
3	**seedlings**	**35**	**3**	**7**	**6**	**Total**	**183**	**17**	**38**

In conclusion, it was observed that the growth and development indicators of Batata above-ground stems in local and introduced cultivars were different in different cultivars. From this, it can be said that during our research it was found that the planting period of 30-day-old Batata seedlings in the open field is directly related to their field resistance. At the same time, it was observed during our experiments that when the seedlings were planted on the 10th of May, in addition to their field resistance, the rapid growth of branches, the size of the leaf surface and other characteristics showed a positive result compared to the control option. However, the yield in propagation in this method is low, because on average 15-25 whole plants are obtained from one Batata nodule. When plants are planted in three parts (bottom, middle and top), the yield of seedlings increases three times. If the planted seedlings are planted again in parts, the number of seedlings will increase several times. But due to the fact that the quality of the cuttings taken from different parts of the plant is different, the rooting, growth, development and emergence of the cuttings will be different.

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