

# Selecting Initial Breeding Sources for Morning Varieties from The Potato Variety Sample Collection

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## Abstract:

Abstract: the article talks about the method of selection of initial selection resources for early varieties from the collection of potato variety samples.

**Keywords:** Potatoes, potato crops, variety, sample, collection, selection.

## Introduction

Now potatoes are sold in 138 countries of the world, 20-22 million. Planted per hectare, 320-335 mln. tons of gross crops are grown. Countries with developed potato production are China (72 million tons), Russia (35.7 million tons), India (26.3 million tons), Ukraine (19.1 million tons), USA (17.7 million tons), Germany (11.6 million tons), Poland (11.2 million tons), Belarus (8.5 million tons), the Netherlands (7.2 million tons), France (6.3 million tons). The average yield is 15-17 t/ha worldwide.

The average yield of potatoes in the world is 18 tons per hectare, and the annual production per capita is 34.2 kg. 50-60% of the produced crop is used for food, 25% as fodder and about 10% as seed (FAO). Providing farms with quality seed materials, creating new ways to save potato seeds are important problems in all potato-growing countries.

## Research Results

Experiments will be conducted in 2022-2023 at the experimental sites of the Scientific Research Institute of Vegetables, Rice Crops and Potatoes.

The subject of the research is the study of the high-yielding and early varieties of potatoes and their planting in different periods.

Before planting, potato collection samples were placed in a special room with a temperature of +14-18 C and air humidity of 70-80% for germination (harvesting), and after the day of harvesting, they were germinated in quality in 20-25 days.

Dutch Kronos, Picasso, Evolution, Royal, Sante, Arizona, Manitou, Curado, Saviola, Arielle, Red scarlet German Smena, Adretta, Gala, Russian Kronos, Romantika, Mikado, Red vulet Sineglazka, Hungarian Botont, Balatoni rossa, White, Demon, Balatoni sarga Dizere of France, Spunta of China #01, #02, #05, #9, #12 and local varieties Umid-2, Kuvonch 1656, Tashkent-65, Sarnav, Pskom; In the experimental field of Bogizagon



varieties, samples of each variety were planted in a 70×25 cm scheme in 2 rows of 5 m length on March 4 in an experimental field that was prepared in advance.

In the experimental version, 36 samples of varieties were planted. In the collection of planted potatoes, phenological observation and biometric measurements were carried out on variety samples. After planting every 10 cultivars, a local cultivar Pskom was planted as a control cultivar. Kronos, Picasso, Evolution, Umid-2, Red bullet, Romantika, Mikado, Royal, Folva, Smega varieties were compared with the control variety in the first ten. 10% of the control Pskom variety germinated in 14 days, 75% germinated in 20 days, while Evolution, Red Bullet, Romantika, Mikado, Simega, Arizona varieties germinated 1-2 days earlier than the control variant (Table 1).

**1-table Results of phenological observation of potato collection samples (2023)**

№	Kinds of examples	Germination of seedlings, day		From germination to ..., days			
		10%	75%	to shine		bloom	
				10%	75	10%	75%
1	Kronos	14	23	22	31	31	38
2	Pikasso	15	22	22	30	32	39
3	Evolyushen	12	20	22	28	30	37
4	Umid-2	14	23	23	31	31	40
5	Red bullet	12	19	19	24	27	35
6	Romantika	13	21	22	28	30	36
7	Mikado	13	21	22	27	30	35
8	Royal	16	23	23	29	31	39
9	Folva	15	21	23	29	32	37
10	Smega	13	21	21	29	29	38
	<b>Pskom (st)</b>	14	20	23	28	30	37
11	Dizere	13	22	22	29	30	38
12	Sante	16	23	24	30	32	39
13	Arizona	12	20	24	29	31	37
14	Manitou	14	22	24	30	31	39
15	Qvonch 1656	14	19	23	30	30	35
16	Spunta	12	19	21	26	29	36
17	Auretta	14	20	25	29	31	38
18	Gala	13	22	23	29	31	39
19	Kurodo	14	20	23	30	32	38
20	Saviola	13	23	21	30	29	38
	<b>Pskom (st)</b>	14	20	23	29	32	38
21	Sneglazka	13	22	21	28	31	38
22	Arielle	16	20	24	29	32	38
23	Red skarlet	15	23	24	30	30	39
24	Toshkent-65	14	23	24	31	32	40
25	Sarnav	15	20	23	30	32	40
26	Botont	14	20	22	29	31	39
27	Balatoni rossa	14	19	22	28	32	39
28	White	14	19	22	29	31	36
29	Demon	13	22	21	30	31	40
30	Balattonni sarga	13	19	21	27	29	36
30	<b>Pskom(st)</b>	15	21	22	28	31	38



№	Kinds of examples	Germination of seedlings, day		From germination to ..., days			
				to shine		bloom	
		10%	75%	10%	75	10%	75%
31	Bog'izag'on	15	22	24	29	33	36
32	№001	13	20	27	27	32	32
33	№002	14	22	25	26	31	31
34	№005	13	21	24	27	32	34
35	№009	14	22	23	25	33	33
36	№012	15	22	25	26	33	35
	<b>Pskom(st)</b>	15	23	26	29	36	39

When studying the number of plant stems in these 10 varieties, the number of stems in Kronos, Picasso, Evolution, Red bullet, Romantika, and Mikado varieties is 0.2 more than the control variety; 0.3; 0.5; 0.2; It was found to be 0.7 times more.

In the next 20 varieties, Dizere, Sante, Arizona, Manitou, Kuvonch, Spunta, Aurette, Gala, Curado, Saviolla were tested in comparison with the control Pskom variety. It took 14-20 days for 10-75% germination of potato seedlings in the control Pskom variety, while Dizere, Arizona, Spunta, Gala, Kurodo varieties germinated 1-2 days earlier than the control option. Germination of Aurette Manitou, Kuvonch 1656 varieties was equal to the control option. In the next 30, Sneglazka, Arielle, Red scarlet, Tashkent-65, Sarnav, Botont, Balatoni rossa, White, Demon, Balatonni sarga varieties were compared with the Pskom variety.

It took 13-21 days for 10-75% germination of potato seedlings in the control Pskom variety, while Sneglazka, Tashkent-65, Botont, Balatoni rossa, White, Demon, Balatonni sarga varieties germinated 1-2 days earlier than the control option. Also, it was found that the weight and productivity of these varieties were higher than the control variant by 47.9 to 63.6 percent. (Table 2)

## 2-table Results of biometric measurements on potato samples planted as a gene pool (2023)

№	Variety samples	During the flowering period of the plant		Crop in one bush, g	Productivity, t/h	Relative to control, %
		number of stalks, pcs	stem height, cm			
1	Kronos	3,2	46,5	330,0	18,4	133,3
2	Pikasso	3,3	50,1	380,0	21,8	158,0
3	Evolyushen	3,5	50,2	410,0	22,9	165,9
4	Umid-2	2,4	37,2	215,0	12,0	87,0
5	Red bullet	3,2	48,4	360,0	20,1	145,7
6	Romantika	3,1	49,6	380,0	21,2	153,6
7	Mikado	3,7	44,1	350,0	19,6	142,0
8	Royal	2,2	39,9	210,0	11,7	84,8
9	Folva	3,1	45,6	220,0	12,3	89,1
10	Smega	2,0	38,8	230,0	12,8	92,8
	<b>Pskom (st)</b>	3,0	40,8	248,0	13,8	100,0
11	Dizere	3,3	51,0	380,0	21,2	142,3
12	Sante	2,5	30,8	215,0	12,0	80,5



№	Variety samples	During the flowering period of the plant		Crop in one bush, g	Productivity, t/h	Relative to control, %
		number of stalks, pcs	stem height, cm			
13	Arizona	3,5	52,5	390,0	21,8	146,3
14	Manitou	2,1	31,8	218,0	12,2	81,9
15	Quvonch 1656	3,4	47,9	226,0	12,6	84,6
16	Spunta	3,0	51,2	305,0	17,0	114,1
17	Auretta	2,0	44,1	279,0	15,6	104,7
18	Gala	3,1	52,3	370,0	20,7	138,9
19	Kurodo	3,3	50,3	365,0	20,4	136,9
20	Saviola	2,8	40,6	266,0	14,8	99,3
	<b>Pskom (st)</b>	2,9	48,0	267,0	14,9	100,0
21	Sneglazka	2,6	33,7	210,0	11,7	83,6
22	Arielle	2,5	33,8	201,0	11,2	80,0
23	Red skarlet	2,2	40,2	193,0	10,8	77,1
24	Toshkent-65	3,2	48,6	370,0	20,7	147,9
25	Sarnav	2,2	35,5	202,0	11,3	80,7
26	Botont	3,5	53,5	450,0	25,2	180,0
27	Balatoni rossa	3,6	54,6	410,0	22,9	163,6
28	White	3,1	60,2	390,0	21,8	155,7
29	Demon	3,3	58,5	420,0	23,5	167,9
30	Balatoni sarga	3,2	58,9	410,0	22,9	163,6
30	<b>Pskom(st)</b>	2,7	42,3	251,0	14,0	100,0
31	Bog'izag'on	2,6	46,9	220,0	12,3	91,8
32	№001	3,2	48,5	380,0	21,2	158,2
33	№002	3,1	50,5	360,0	20,1	150,0
34	№005	3,5	56,5	370,0	20,7	154,5
35	№009	3,2	50,4	320,0	17,9	133,6
36	№012	3,3	51,2	380,0	21,2	158,2
	<b>Pskom(st)</b>	2,8	43,3	240,0	13,4	100,0

Potato germination of Sarnav, Red scarlet varieties was equal to the control option.

When the samples of Bozhigaon, No. 01, No. 02, No. 05, No. 9, No. 12 were compared with the Pskom variety, it took 15-23 days for 10-75% germination of potato seedlings in the Control Pskom variety. China lines #01, #02, #05, #9, #12 germinated 1-2 days earlier than the control variant. If the number of stems is 0.1 to 0.5 more, and the height of the stem is higher than 5.2 to 13.3 cm, the total yield is 58.2 than the control Pskom variety; 50.0; 54.5; 33.5; It was 58.2% higher than the control option, which was reflected in the experiments.

### Conclusion

1. In order to preserve the variety samples of the potato collection as a gene pool, 36 varieties of potatoes were planted and studied in the conditions of the Tashkent region in early spring.
2. According to the results of the study, when compared with the local Pskom variety of potatoes, Evolution, Red bullet, Romantika, Mikado, Simega, Arizona, Dizere, Arizona,





Spunta, Gala, Kurodo, Sneglazka, Tashkent-65, Botont, Balatoni rossa, White, Demon, Balaton sarga and Chinese lines No. 01, No. 02, No. 05, No. 9, No. 12, sprouting, budding, and flowering were 1-3 days earlier than the control variant, the number of stalks and the yield of stalks were also controlled. 40-50% higher performance than the alternative was found in the experiments.

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