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SELECTION OF PUMPKIN VARIETIES IN SECONDARY CROPPING

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Abstract
In the second crop, the highest marketable yield was obtained from the pumpkin varieties Red Gowed (42.7 t/ha), No. 17731 (40.9 t/ha), and Orginal (40.7 t/ha), and the highest net profit and profitability were obtained from the pumpkin varieties Red Gowed (60.7 mln soums and 245.6%), No. 17731 (57.2 mln soums and 232.2%), Orginal (56.8 mln soums and 230.7%), No. 16338 (50.7 mln soums and 207.5%), and Maki (45.5 mln soums and 187.0%).

Keywords: Repeated crop, variant, cultivar, leaves, leaf height, main stem, yield, biometric, sowing date, fruit flesh, fruit quantity, marketable, net income, profitability.

Introduction

TAKRORIY EKINDA QOVOQ NAV NAMUNALARINI TANLASH

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Annotatsiya
Takroriy ekinda eng yuqori tovarbop hosildorlik qovoqning Red Gowed (42,7 t/ga), № 17731 (40,9 t/ga) va Orginal (40,7 t/ga) navlarida, eng yuqori sof foyda va rentabellikni qovoqning Red Gowed (60,7 mln. so‘m va 245,6 %), № 17731 (57,2 mln. so‘m va 232,2 %), Orginal (56,8 mln. so‘m va 230,7 %), № 16338 (50,7 mln. so‘m va 207,5 %) va Maki (45,5 mln. so‘m va 187,0 %) navlarida aniqlangan.

Kalit so‘zlar: Takroriy ekin, variant, navlar, barg ehi, barg bo‘yi, asosiy poya, hosildorlik, biometrik, ekish muddati, meva eti, meva soni, tovarbop, sof daromad, rentabellik.

Аннотация
При повторной культуре наибольшая товарная урожайность получена у сортов тыквы Red Gowed (42,7 т/га), No 17731 (40,9 т/га) и Orginal (40,7 т/га), наибольшая чистая прибыль и

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рентабельность отмечены у сортов тыквы Red Gowed (60,7 млн. сум и 245,6%), No 17731 (57,2 млн. сум и 232,2%), Orginal (56,8 млн. сум и 230,7%), No 16338 (50,7 млн. сум и 207,5%) и Maki (45,5 млн. сум и 187,0%).

Ключевые слова: Повторная культура, вариант, сорта, листья, высота листа, основной стебель, урожайность, биометрический, срок посева, мякоть плода, количество плодов, товарный, чистый доход, рентабельность.

Introduction

In agriculture, the variety is the main link in technology. The possibilities of the variety are revealed only under optimal technological conditions. The variety and technology are a whole. The ecological passport serves as the basis for the development of a technological passport that defines the variety technology [12]; [13].

In Russia, in 1977, the collection of melon crops included 7,471 specimens, including 1,953 pumpkin varieties, and in 2004, there were 2,407 specimens. According to the State Register of Selection Achievements Approved for Use in 2004, 24 varieties of large-fruited pumpkins, 5 varieties of butternut squash, and 10 varieties of hard-skinned pumpkins were zoned [15].

GITarakanov, AVGoncharov [14] studied the biological characteristics of 28 samples of large-fruited pumpkin, 19 of nutmeg pumpkin, 15 of hard-skinned pumpkin, and 1 of fig-leaf pumpkin. The highest-yielding varieties of large-fruited pumpkin were Titan, Madagascar, Kustovaya zolotaya. Michurinskaya, nutmeg pumpkin – No. 139, Yaponskaya guitar, Zhemchuzhina, Kustovaya 1, hard-skinned pumpkin – Spirit F1, No. 14, Barnaulskaya kustovy, Golosemyannaya (GFR), Bolshoy Max and fig-leaf pumpkin – No. 255.

Pumpkin breeding has been carried out in the Republic of Belarus since 1995, with the aim of creating pumpkin varieties and heterosis hybrids with a fruit yield of 40-50 t/ha and a seed yield of 200-300 kg/ha, resistant to NMR, with a fruit content of 11 to 17 mg% of R-carotene, up to 7% of sugar, a flesh thickness of 6-8 cm, and good storage properties [16]. In addition, technologies for growing pumpkin crops in open ground and creating children's and dietary food products (succulents from pumpkin fruits, etc.) are being developed at the Belarusian Research Institute [3].

In Austria, the Styrian pumpkin variety is grown, with seeds that have a black surface and no hard shell, and fruits that are round and yellow-orange in color. They are harvested both by combines and by hand (also, during the harvest season, the seeds are dug up directly in the field, and half of the fruits remain as fertilizer) [5].

All three types of pumpkin are grown in China, but the early-ripening varieties of butternut squash are preferred, as pumpkins are grown both by sowing seeds in the soil and by seedling method (seedlings are planted in late April). The feeding area of one plant is 1-1.3 m2, and it is watered and fed with poultry manure and furnace ash. When the plant bears 1-2 fruits, the branches are pinched out [17].

Experiments conducted in South Korea on the large-fruited pumpkin variety Evis showed that the best time to sow seeds in trays for an early harvest in early June is March 5 (23.22 t/ha), and the critical time is March 25 (18.2 t/ha) [20].

Various varieties of butternut squash are grown in many countries: in Moldova – Novinka [11], in Ukraine – Gileya, Arabatskaya, Vitaminnaya [10]; [6], in Spain – pear-shaped and cylindrical

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varieties [2], in China – Sikhulu, Tshangpin, Panchun, Dabi (Bolshaya severnaya), Dabey (Bolshaya belaya) [17], in India – Pusa Vishwas, Arka Chandam, Ambili, Solan Badan [21], in Zambia – Munasangu [19], in the USA – Butterbowl, Buttenut, Ponca, Cheese i dr. [18]; [22], in Japan – Hyaato [23].

In Uzbekistan, scientific achievements in the field of vegetable and melon growing, in particular new varieties with high complex economic characteristics and improved agrotechnologies, are being implemented to increase the income of agroclusters, farmers, dehkans and personal household farms, and the production volume of processing enterprises. Despite this, although extensive scientific research has been carried out in our republic in recent years to increase the yield and quality of pumpkin, the selection of suitable varietal samples for growing pumpkin as a repeated crop is not scientifically justified.

Research methods

The research will evaluate important morphobiological and valuable economic traits of pumpkin varieties from Uzbekistan, Japan, China, Vietnam, Turkmenistan, Trinidad and Tobago, Russia, Lebanon, Laos, Spain, India, Georgia, Germany and the USA, grown from 20-day-old seedlings of Russian selection.

In the research, 20-day-old seedlings of pumpkin varieties were planted in the first decade of June in a planting scheme of (280+70)/2×70 cm. The experiment was non-reversible, each variety had 2 rows and a row length of 23 m, and the number of plants per variety was 30. To determine the yield, the yield of all plants in the field by variety was collected and determined. The experimental area was 80 m², with a total area of 1600 m². When comparing varieties, the “Palov kadu 268” variety, zoned in Uzbekistan, served as a standard.

The following phenological observations, biometric and other indicators were calculated in the field experiments.

Field experiments were carried out on the basis of methodological manuals "Methodology of conducting experiments in vegetable, vegetable and potato cultivation" [1], "Metodika polevogo opyta v ovoshchevodstve i bakchevodstve" [4], "Metodika polevogo opyta v ovoshchevodstve" [8] and "Metodicheskie ukazaniya VIR po izucheniyu i podderjaniyu mirovoy kollektsii tykvennyx kultur (tykva)" [9]. went The statistical analysis of research results was calculated in Excel 2010 and Statistica 7.0 for Windows computer program, with a confidence interval of 0.95% according to the dispersion method "Metodika polevogo opyta" [7].

Research results

In the repeated crop cultivation of pumpkins, the biological ripening of fruits to 75% of the variety samples was 116 days for the variety Palov Kadu 268 (st), compared toThe Macre Verde variety showed biological ripening of fruits 12 days earlier, the Ovalnaya variety showed 10 days earlier, the Kashkariski 1644 variety showed 8 days earlier, the Shirintoy variety showed 5 days earlier, the Ushiki kuri variety showed 4 days earlier, and the Maki variety showed 2 days earlier. The pumpkin varieties Janke Flid and Bidzen Chirpin showed 1 day earlier, the No. 36677 and No. 16338 varieties showed 2 days earlier, the Ulibka variety showed 3 days earlier, the Sva-Da-Men variety showed 5 days earlier, the Hagogo variety showed 6 days earlier, the No. 36978 variety showed 7 days earlier, the No. 16297 variety showed 11 days earlier, the Orginal variety showed

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15 days earlier, the No. 17731 variety showed 16 days earlier, and the Red Gowed variety showed 18 days earlier.

Among the pumpkin varieties, the longest main stem was formed in the Red Gowed (636.5 cm), Original (577.5 cm) and Macre Verde (549.4 cm) varieties, while the shortest main stems were formed in the No. 16297 (348.5 cm), Ushiki kuri (342.5 cm), Sva-Da-Men (319.4 cm) and Ulibka (173.0 cm) varieties (Table 1).

Table 1 Pumpkin varieties in repeated plantingstem and leaf biometric indicators (2020-2022)

Sample name	Main stem length, cm	Number of side branches, pcs.	Number of leaves per bush, pcs.	Leaf, cm	
				tall	width
Pilaf kadu 268 (st)	431.4	4.3	326.3	16.6	19.8
Sweet	360.9	4.9	361.4	14.8	18.8
Original	577.5	9.1	460.5	14.5	20.7
Macre Verde	549.4	5.7	529.0	15.3	24.4
Janke Flid	398.9	4.1	425.4	22.4	29.5
Red Gowed	636.5	11.4	437.8	17.7	22.5
Ovalnaya	379.4	3.9	304.1	18.2	21.3
Hagogo	367.3	4.3	347.3	18.6	24.7
Bidzen Chirpin	425.9	5.7	453.6	11.6	16.7
Kashkariski 1644	451.6	4.9	340.5	18.8	24.9
Swa-Da-Men	319.4	4.1	282.5	17.4	22.5
Maki	370.8	7.3	414.0	14.7	19.8
Smile	173.0	3.4	250.6	14.1	18.3
Ushiki kuri	342.5	5.9	432.1	17.2	19.4
No. 36677	445.4	6.5	463.1	13.5	22.6
No. 33475	489.8	3.9	424.8	21.0	30.7
No. 16297	348.5	6.7	317.0	22.3	25.4
No. 17731	367.6	4.8	231.4	14.0	22.8
No. 36978	392.2	6.0	354.2	18.4	22.5
No. 16338	446.0	8.5	333.9	19.5	22.7
EKF05	10.2	0.2	8.7		
Sx%	2.5	2.7	2.3		

According to the data in Table 1, among the pumpkin varieties in the repeated crop, the highest number of lateral branches was formed in the Red Gowed (11.4 pieces), Original (9.1 pieces) and No. 16338 (8.5 pieces), while the lowest number of lateral branches was formed in the Janke Flid (4.1 pieces), Sva-Da-Men (4.1 pieces), Ovalnaya (3.9 pieces), No. 33475 (3.9 pieces) and Ulibka (3.4 pieces). The highest number of leaves per bush was formed in the Macre Verde (529.0 pieces), while the lowest number of leaves was formed in the Ulibka (250.6 pieces) and No. 17731 (231.4 pieces) varieties.

In a repeated crop, pumpkin varieties are selected by the longest leaf.Janke Flid (22.4 cm), No. 16297 (22.3 cm) and No. 33475 (21.0 cm) varieties, on the contrary, showed the smallest leaf length.It was found that the varieties No. 36677 (13.5 cm) and Bidzen Chirpin (11.6 cm) formed the widest leaf width. It was also found that the varieties No. 33475 (30.7 cm) and Janke Flid (29.5 cm) formed the widest leaf width, while the varieties Bidzen Chirpin (16.7 cm) formed the smallest leaf width.

In the repeated crop, it was determined that the pumpkin varieties with the largest fruits were Bidzen Chirpin (37.5 cm) and the smallest fruits were Ulibka (16.4 cm), the widest fruits were No. 36978 (25.6 cm) and the smallest fruits were Shirintoy (15.2 cm), Ulibka (14.8 cm), as well as the thick-fruited varieties Bidzen Chirpin (3.2 cm) and Red Gowed (3.1 cm), and the thin-fruited

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varieties No. 33475 (2.3 cm), Ulibka (2.2 cm) and Sva-Da-Men (2.0 cm) (Table 2).

Table 2 Pumpkin varieties in repeated plantingBiometric indicators of fruits (2020-2022)

Sample name	Fruit, cm		Fruit flesh thickness, cm	Number of fruits, pcs.	Fruit weight, kg	Fruit yield per bush, kg
	length	width				
Pilaf kadu 268 (st)	35.4	20.6	2.9	1.7	2.9	4.8
Sweet	24.6	15.2	2.4	2.4	1.8	4.3
Original	27.4	22.4	3.0	2.6	2.1	5.5
Macre Verde	28.6	21.3	2.8	2.1	2.5	5.4
Janke Flid	30.3	23.4	2.4	2.7	1.8	4.8
Red Gowed	23.6	21.9	3.1	2.0	2.9	5.8
Ovalnaya	35.9	17.0	2.6	1.3	2.7	3.5
Hagogo	29.3	21.6	2.5	2.0	2.2	4.4
Bidzen Chirpin	37.5	23.5	3.2	1.4	3.7	5.1
Kashkariski 1644	30.9	17.6	2.9	1.3	2.5	3.3
Swa-Da-Men	26.7	16.4	2.0	1.7	2.1	3.5
Maki	28.5	13.8	3.0	2.0	2.3	4.7
Smile	16.4	14.8	2.2	4.5	1.1	5.0
Ushiki kuri	18.5	15.0	2.6	2.5	1.9	4.8
No. 36677	20.5	23.8	2.4	1.8	2.5	4.4
No. 33475	20.3	22.0	2.3	1.9	2.2	4.3
No. 16297	23.9	20.3	2.5	1.7	2.2	3.7
No. 17731	28.3	18.6	3.0	2.2	2.5	5.5
No. 36978	25.4	25.6	2.8	1.7	3.2	5.4
No. 16338	26.0	16.5	2.7	2.2	2.4	5.3
EKF05	0.8	0.7	0.1	0.1	0.1	0.1
Sx%	3.1	3.6	3.2	2.6	2.2	2.3

The highest number of fruits per bush was determined in the Ulibka (4.5 pieces) and the lowest number of fruits in the Janke Flid (2.7 pieces) varieties, heavy fruits were determined in the Bidzen Chirpin (3.7 kg) and No. 36978 (3.2 kg) varieties, and small fruits were determined in the Ushiki kuri (1.9 kg), Shirintoy (1.8 kg), Janke Flid (1.8 kg) and Ulibka (1.1 kg) varieties, the highest fruit yield per bush was determined in the Red Gowed (5.8 kg), Orginal (5.5 kg) and No. 17731 (5.5 kg), and the lowest fruit yield was determined in the No. 16297 (3.7 kg), Ovalnaya (3.5 kg), Sva-Da-Men (3.5 kg) and Kashkariski 1644 (3.3 kg).

In the repeated crop, the highest total yield of pumpkin varieties was determined in the Red Gowed (47.4 t/ha), No. 17731 (45.2 t/ha) and Orginal (44.9 t/ha) varieties, and the lowest total yield was determined in the Sva-Da-Men (28.9 t/ha), Ovalnaya (28.9 t/ha) and Kashkariski 1644 (26.9 t/ha) varieties (Table 3).

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Table 3 Yield of pumpkin varieties in repeated crops (2020-2022.)

Sample name	Total yield, t/ha	Marketable yield, t/ha				
		2020	2021	2022	middle	compared to st grade, %
Pilaf kadu 268 (st)	39.4	32.2	36.3	28.9	32.5	100.0
Sweet	35.4	28.3	35.2	28.9	30.8	94.7
Original	44.9	39.0	41.1	42.1	40.7	125.4
Macre Verde	44.1	29.8	35.6	27.8	31.1	95.6
Janke Flid	39.2	31.1	35.3	27.5	31.3	96.3
Red Gowed	47.4	39.6	46.8	41.7	42.7	131.4
Ovalnaya	28.9	25.3	31.4	22.1	26.3	80.8
Hagogo	35.9	30.3	33.7	27.2	30.4	93.5
Bidzen Chirpin	42.2	33.3	39.2	29.2	33.9	104.3
Kashkariski 1644	26.9	18.3	21.3	16.9	18.9	58.0
Swa-Da-Men	28.9	23.2	29.5	21.3	24.7	75.9
Maki	38.4	31.7	40.6	32.4	34.9	107.4
Smile	40.8	33.6	36.2	31.4	33.7	103.8
Ushiki kuri	38.9	28.8	35.7	29.2	31.3	96.2
No. 36677	36.2	28.0	30.9	30.3	29.7	91.5
No. 33475	34.9	27.3	34.0	28.0	29.8	91.5
No. 16297	30.5	21.0	27.4	20.8	23.1	71.0
No. 17731	45.2	39.0	44.7	39.0	40.9	125.9
No. 36978	43.8	32.7	47.5	32.4	37.5	115.4
No. 16338	43.2	34.5	40.4	38.1	37.6	115.8
EKF05	0.9	1.0	0.9	1.0	0.7	-
Sx%	2.3	3.3	2.5	3.3	2.3	-

In repeated crops, the highest marketable yields were formed in the pumpkin varieties Red Gowed (42.7 t/ha), No. 17731 (40.9 t/ha) and Orginal (40.7 t/ha), while the lowest marketable yields were formed in the varieties Ovalnaya (26.3 t/ha), Sva-Da-Men (24.7 t/ha), No. 16297 (23.1 t/ha) and Kashkariski 1644 (18.9 t/ha).

In the repeated crop, the highest marketable yield was achieved by the varieties Ovalnaya (91.0%), Maki (90.9%), Orginal (90.6%), No. 17731 (90.5%) and Red Gowed (90.1%), while the lowest marketable yield was achieved by the varieties No. 16297 (75.7%), Macre Verde (70.5%) and Kashkariski 1644 (70.3%).

In the repeated crop cultivation of pumpkin, the highest net profit was achieved by the pumpkin varieties Red Gowed (60.7 million soums), No. 17731 (57.2 million soums), Original (56.8 million soums), No. 16338 (50.7 million soums), and Maki (45.5 million soums), while the pumpkin varieties No. 16297 (22.5 million soums), Macre Verde (22.5 million soums), Ovalnaya (15.6 million soums), and Kashkariski 1644 (5.3 million soums) showed the lowest net profit.

In the repeated cropping of pumpkin varieties, the highest yield was observed in the varieties Red Gowed (245.6%), No. 17731 (232.2%), No. 36978 (232.2%), Original (230.7%) and No. 16338 (207.5%), while the lowest yield was observed in the varietiesNo. 16297 (94.7 %), Macre Verde (93.3 %), Ovalnaya(65.1%)and Kashkariski 1644 (22.8%) varietieswas determined.

Conclusion

The highest marketable yield in repeated crops was achieved in the pumpkin varieties Red Gowed (42.7 t/ha), No. 17731 (40.9 t/ha) and Original (40.7 t/ha), the highest net profit andprofitabilityRed Gowed pumpkin (60.7 million soums and245.6%), No. 17731 (57.2 million

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soums and232.2%), Original (56.8 million soums and230.7%), No. 16338 (50.7 million soums and207.5%) and Maki (45.5 million soums and 187.0%) varieties.

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