

UO`T: 635.621

SUBMISSION OF PROSPECTIVE PUMPKIN VARIETY SAMPLES FOR
CULTIVATION IN REPEAT CROPS

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Abstract. Among the white pumpkin variety samples, the marketable yield of the Red Gowed (42.7 t/ha), No. 17731 (40.9 t/ha), and Original (40.7 t/ha) samples was up to 25.4–31.4% higher than that of the standard and other samples; the profitability indicators for Red Gowed (245.6%), No. 17731 (232.2%), and Original (230.7%) were up to 125.6–140.5% higher than that of the standard Palov Kadu 268 variety (105.1%).

Аннотация. Среди образцов белых сортов тыквы товарная урожайность у образцов Red Gowed (42,7 т/га), No 17731 (40,9 т/га) и Original (40,7 т/га) была на 25,4-31,4% выше по сравнению со стандартом и другими образцами; показатели рентабельности у образцов Red Gowed (245,6%), No 17731 (232,2%) и Original (230,7%) были на 125,6-140,5% выше показателя стандартного сорта Палов каду 268 (105,1%).

Annotatsiy. Qovoq oq nav namunalari ichida tovarbop hosili: Red Gowed (42,7 t/ga), № 17731 (40,9 t/ga) va Original (40,7 t/ga) namunalarida standart va boshqa namunalarga nisbatan 25,4-31,4% gacha yuqori; rentabellik ko'rsatkichlari: Red Gowed (245,6%), № 17731 (232,2%) va Original (230,7%) standart Palov kadu 268 navi (105,1%) ko'rsatkichidan 125,6-140,5% gacha yuqori bo'lgan.

INTRODUCTION

Pumpkin fruits are a valuable food product and are the primary source of carbohydrates, vitamins, essential oils, mineral salts, and phytoncides necessary for the normal functioning of the human body. In recent years, the demand for pumpkin products has been increasing. According to FAO data, 26.5 million tons of pumpkin fruits are grown worldwide, with the leading countries being China (7.8 million tons), India (5.1 million tons), Russia (1.22 million tons), Ukraine (1.21 million tons), and the USA (1.0 million tons). In 2025, the total area under pumpkin cultivation as a primary crop in Uzbekistan was 8.3 thousand hectares, with a gross harvest of 156.4 thousand tons and a yield of 206.3 c/ha.

To increase the income of agro-clusters, dehqan farms, and owners of household plots in Uzbekistan, scientific achievements in vegetable and melon growing, new varieties with high economic value, and improved agricultural technologies are being implemented. Although research has been conducted in our republic on the cultivation of pumpkin and increasing its yield, no research has been conducted on the selection of varieties suitable for cultivation as a secondary crop and the development of cultivation technologies.





Research methods. In the studies, 20-day seedlings of pumpkin variety samples were planted in the first decade of June according to the $(280+70)/2 \times 70$ cm planting scheme. The experiment was repeated; each variety consisted of 2 rows with a row length of 23 m, and the number of calculated plants was 30 units per variety. When determining yield, the yield of all plants in the field was determined by variety. The experimental area was 80 m², with a total area of 1,600 m². When comparing the varieties, the "Palov Kadu 268" variety, which is zoned in Uzbekistan, served as the standard.

Field experiments were calculated based on the following phenological observations, biometric, and other indicators.

Field experiments were conducted in accordance with the "Methodology for Conducting Experiments in Vegetable, Melon, and Potato Growing" (Azimov B.Zh., Azimov B.B., 2002), "Methodology of Field Experiments in Vegetable and Melon Growing" (Belik V.F., 1992), and "Methodology of Field Experiments in Vegetable Growing." (S.S. Litvinov, 2011) and "VIR Methodological Guidelines for the Study and Maintenance of the World Collection of Pumpkin Crops (Pumpkin)" (1977). Statistical analysis of the research results was performed using the "Excel 2010" and "Statistica 7.0 for Windows" computer programs using the dispersion method of the "Field Experiment Methodology" (Dospekhov B.A., 1985) with a confidence interval of 0.95%.

Research results. Among the pumpkin varieties grown as a secondary crop, the biological ripening of 75% of the fruits was 116 days for the standard variety Palov Kadu 268. Among the studied samples, this process occurred 4–12 days later in the Macre Verde sample (128 days), Ovalnaya (126 days), Kashgarskaya 1644 (124 days), and Ushiki kuru (120 days). No 33475 (116 days), Janke Flyd and Bidzen Chirpin (115 days, No 36677 and No 16338, Maki (114 days), Ulibka (113 days) the biological ripeness of the fruits was close or equal to the standard variety indicator.

The biological ripening of the fruits in the sample Sva-Da-Men and the Shirintoy variety (111 days), the Hagogo sample (110 days), and the 36978 sample (109 days) was 4–7 days earlier than the standard variety, while the fruits of the samples No 16297 (105 days), Original (101 days), No 17731 (100 days), and Red Gowed (98 days) ripened 7–30 days earlier than the standard variety Palov Kadu 268 and other samples, distinguishing themselves among all varieties by their early maturity.

When analyzing the average main stem length of pumpkin variety samples for 2020-2022 in the second crop (see Appendix 3), it was found that the main stems were 27.4–47.5% longer than those of the standard variety Palov Kadu 268 (431.4 cm): Red Gowed (636.5 cm), Original (577.5 cm), and Macre Verde (549.4 cm) were formed, while No 33475 (489.8 cm), Kashgarskaya 1644 (451.6 cm), No 16338 (446.0 cm), and No 36677 (445.4 cm) were slightly longer by 3.2–13.5%.

Compared to the 268 (st) variety (431.4 cm), 5.5; 32.5; 39.2; 52.0; 60.6; 63.8; 64.1; 70.5; 82.9; Biden Chirpin (425.9 cm), Janke Flid (398.9 cm), No 36978 (392.2 cm), Ovalnaya (379.4 cm), Maki (370.8 cm), No 17731 (367.6 cm), Hagogo (367.3 cm), Shirintoy (360.9

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cm), No 16297 (348.5 cm), Ushiki kuri (342.5 cm), Sva-Da-Men (319.4 cm) and Ulibka (173.0 cm) exhibited small main stems.

When analyzing the number of lateral branches (see Appendix 4), it was established that the Palov kadi 268 (st) variety had 4.3 branches, compared to which the number of lateral branches in the Red Gowed (11.4 branches), Original (9.1 branches), and No 16338 (8.5 branches) samples was 7.1; 4.8 and 4.2, respectively. Pumpkin varieties Maki (7.3 units), No 16297 (6.7 units), and No 36677 (6.5 units) (respectively) were 3.0; 2.4 and 2.2 units, No 36978 (6.0 units), Ushiki kuru (5.9 units), Macre Verde (5.7 units), and Bidzen Chirpin (5.7 units) samples - 1.7; 1.6; 1.4 and 1.4 units, and in the Kashgarskaya 1644 (4.9 units), Shirintoy (4.9 units), and No 17731 (4.8 units) varieties, the number of lateral branches was higher by 13.9–11.6%.

Among the variety samples, the number of lateral branches in the plants of Janke Flid (4.1 units), Sva-Da-Men (4.1 units), Ovalnaya (3.9 units), No 33475 (3.9 units), and Ulibka (3.4 units) was 4.7–21.0% lower than that of the standard Palov Kadu 268 variety (4.3 units).

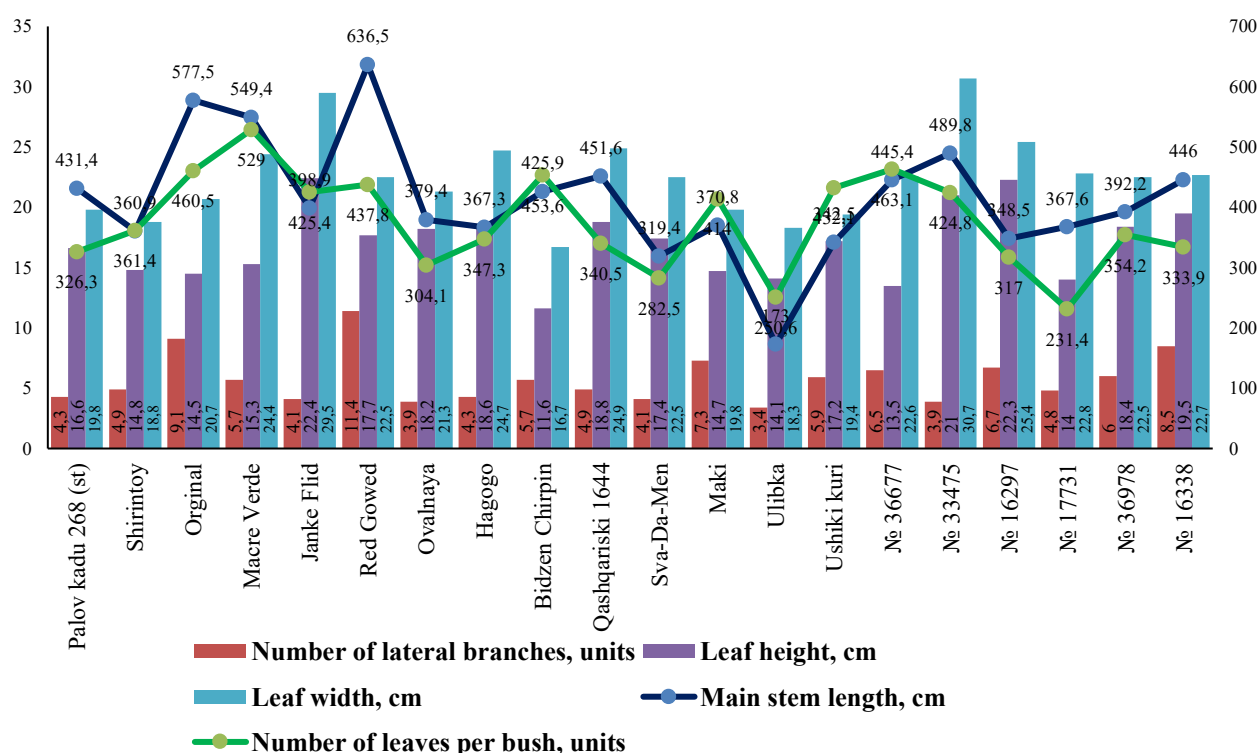


Figure 1.

Biometric indicators of the stem and leaf of pumpkin variety samples under repeated cultivation (2020-2022).

When analyzing the average number of leaves per plant for 2020-2022, it was found that the Macre Verde variety had 529.0 leaves. Compared to the Palov kadu 268 (st) variety (326.3 leaves), the number of leaves was higher in pumpkin samples No. 36677 (463.1 leaves), Original (460.5 leaves), and Bidzen Chirpin (453.6 leaves) by 136.8, 134.2, and 127.3 leaves respectively; in Red Gowed (437.8 leaves) and Ushiki kuri (432.1 leaves) samples by 111.5 and 105.8 leaves; in Janke Flid (425.4 leaves), No. 33475 (424.8 leaves),

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and Maki (414.0 leaves) samples by 99.1, 98.5, and 87.7 leaves; in Shirintoy (361.4 leaves), No. 36978 (354.2 leaves), and Hagogo (347.3 leaves) samples by 35.1, 27.9, and 21.0 leaves; and in Qashgarskaya 1644 (340.5 leaves) and No. 16338 (333.9 leaves) samples by 14.2 and 7.6 leaves. Conversely, the number of leaves was lower in samples No. 16297 (317.0 leaves), Ovalnaya (304.1 leaves), Sva-Da-Men (282.5 leaves), Ulibka (250.6 leaves), and No. 17731 (231.4 leaves) by 9.3, 22.2, 43.8, 75.7, and 94.9 leaves, respectively. 27.9 and 21.0 units, Kashgarskaya 1644 (340.5 units) and No 16338 (333.9 units) samples - 14.2 and 7.6 units more, No 16297 (317.0 units), Ovalnaya (304.1 units), Sva-Da-Men (282.5 units), Ulibka (250.6 units) and No 17731 (231.4 units) samples, respectively: - 9.3; 22.2; 43.8;

According to the data in Figure 1, among the pumpkin variety samples in the repeat crop, the longest leaves were shown by the varieties Janke Flyd (22.4 cm), No 16297 (22.3 cm), and No 33475 (21.0 cm), while conversely, the shortest leaf height was found in the varieties No 36677 (13.5 cm) and Bidzen Chirpin (11.6 cm). It was also established that the widest leaf width was observed in the varieties No 33475 (30.7 cm) and Janke Flid (29.5 cm), while the smallest leaf width was observed in the Bidzen Chirpin variety (16.7 cm).

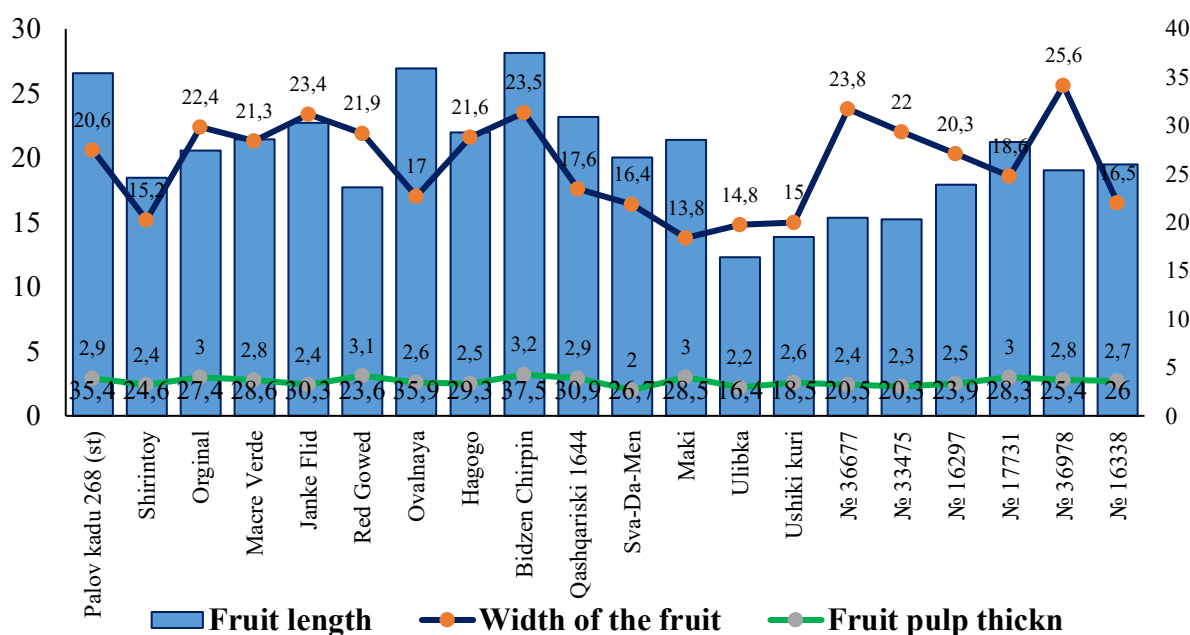


Figure 1.

Fruit length, width, and flesh thickness of pumpkin variety samples in the second crop (2020-2022).

When studying the fruit volume (height - width) of the pumpkin variety samples, the average fruit length of the standard Palov Kadu 268 variety was 35.4 cm. Among the variety samples, the fruit volume in the Bidzen Chirpin sample (37.5 cm) was 2.1 cm or 5.9% longer than the standard variety indicator. The fruits of the Ovalny (35.9 cm) sample did not exceed the indicators of the standard variety. In the local variety Kashgarskaya 1644 (30.9 cm) and the samples Janke Flid (30.3 cm), Hagogo (29.3 cm), Macre Verde (28.6 cm), Maki (28.5 cm), No 17731 (28.3 cm), Original (27.4 cm), Sva-Da-Men (26.7 cm), No 16338 (26.0 cm),

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the fruit length decreased by 12.7-26.6%, in the samples No 36978 (25.4 cm), Shirintoy (24.6 cm), No 16297 (23.9 cm), Red Gowed (23.6 cm) by 33.3-28.3%, and in the samples No 36677 (20.5 cm), No 33475 (20.3 cm) and Ushiki kuri (18.5 cm) by 42.0-47.8%.

Among the pumpkin variety samples grown as a double crop in 2022, the highest total yield was recorded in the Red Gowed (48.2 t/ha) and Original (44.9 t/ha) samples. Compared to the Palov Kadu 268 (st) variety (36.7 t/ha), samples No. 17731 (41.6 t/ha), No. 16338 (41.6 t/ha), Macre Verde (40.8 t/ha), and No. 36978 (39.2 t/ha) demonstrated a higher total yield by 4.9 to 2.5 t/ha, while samples Maki (35.9 t/ha), No. 36677 (35.1 t/ha), No. 33475 (34.3 t/ha), Shirintoy (33.5 t/ha), Janke Flid (32.7 t/ha), Hagogo (31.0 t/ha), and No. 16297 (27.8 t/ha) showed a lower total yield by 0.8, 1.6, 2.4, 3.2, 4.0, 5.7, and 8.9 t/ha, respectively. Conversely, the lowest total yield per unit area was recorded for the Sva-Da-Men (26.1 t/ha), Ovalnaya (24.5 t/ha), and Kashgarskaya 1644 (22.9 t/ha) pumpkin varieties. 2.4; 3.2; 4.0; 5.7 and 8.9 t/ha, respectively.

Table 3.

Yield of pumpkin variety samples under repeated cultivation (2020-2022).

Name of variety samples	Total yield, t/ha	Commodity yield, t/ha				
		Year 2020	Year 2021	Year 2022	average	compared to the st variety, %
Palov kadu 268 (st)	39,4	32,2	36,3	28,9	32,5	100,0
Shirintoy	35,4	28,3	35,2	28,9	30,8	94,7
Orginal	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
Qashqariski 1644	26,9	18,3	21,3	16,9	18,9	58,0
Sva-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
Ulibka	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
№ 36677	36,2	28,0	30,9	30,3	29,7	91,5
№ 33475	34,9	27,3	34,0	28,0	29,8	91,5

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№ 16297	30,5	21,0	27,4	20,8	23,1	71,0
№ 17731	45,2	39,0	44,7	39,0	40,9	125,9
№ 36978	43,8	32,7	47,5	32,4	37,5	115,4
№ 16338	43,2	34,5	40,4	38,1	37,6	115,8
EKF ₀₅	0,9	1,0	0,9	1,0	0,7	-
Sx%	2,3	3,3	2,5	3,3	2,3	-

It was found that in the second crop, the highest marketable pumpkin yield was produced by the Red Gowed (42.7 t/ha), No. 17731 (40.9 t/ha), and Original (40.7 t/ha) varieties, while the lowest marketable yield was produced by the Ovalnaya (26.3 t/ha), Sva-Da-Men (24.7 t/ha), No. 16297 (23.1 t/ha), and Qashqariski 1644 (18.9 t/ha) varieties

In the second crop, the highest share of marketable yield was shown by the Ovalnaya (91.0%), Maki (90.9%), Original (90.6%), No. 17731 (90.5%), and Red Gowed (90.1%) varieties, while the lowest share of marketable yield was exhibited by the No. 16297 (75.7%), Macre Verde (70.5%), and Qashqariski 1644 (70.3%) varieties.

In the cultivation of pumpkin as a double crop, the highest net profit was recorded for the 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) varieties, while the lowest net profit was recorded for the No 16297 (22.5 million soums), Macre Verde (22.5 million soums), Ovalnaya (15.6 million soums), and Qashqariski 1644 (5.3 million soums) varieties.

The highest profitability in the cultivation of pumpkin varieties in the second crop was found 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 profitability was found in the pumpkin varieties No 16297 (94.7%), Macre Verde (93.3%), Ovalnaya (65.1%), and Qashqariski 1644 (22.8%).

Conclusion. The marketable yield of the Red Gowed (42.7 t/ha), No 17731 (40.9 t/ha), and Original (40.7 t/ha) varieties was 25.4–31.4% higher than that of the standard and other varieties; profitability indicators were 125.6–140.5% higher than those of the Red Gowed (245.6%), No 17731 (232.2%), and Original (230.7%), respectively, compared to the standard variety Palov Kadu 268 (105.1%).

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