



WHICH FACTORS HAVE THE STRONGEST INFLUENCE ON GROWING CABBAGE

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Article history:	Abstract:
Received: 6 th October 2022	In the experiment, in comparison with the planting schemes of the white cabbage variety and hybrid, when seedlings were planted on June 15, the mass of cabbage was 113.7 - 110.8% for the Sharkiya-2 variety and 107.3 - 109.4% for the Geant F1 hybrid. The yield of variety Sharkiya-2 (30/VI) was 64.5 t/ha with a planting pattern of 70x50 cm and 68.7 t/ha with a planting pattern of 90x30 cm (July 30) was higher by 13.5 and 10.6% respectively, in the variant planted on a plot of 90x30 cm (July 15), compared with the control. Hybrid Geant F1 (July 30) had the highest yield by 7.4 and 9.0% in the sowing schemes when seedlings were planted on June 15.
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Keywords: planting cabbage, cabbage, variety, hybrid, white cabbage, mass of cabbage, yield, planting scheme.

The Republic of Uzbekistan on September 15, 2017 Decision No. PQ-3281 "On measures for rational placement of agricultural crops and forecast volumes of agricultural production in 2018", PF-No. 29 March 2018 "On additional measures for rapid development of fruit and vegetable production in the Republic of Uzbekistan" Decree No. 5388 and Decision No. 259 of the Cabinet of Ministers dated March 29, 2019 "On the rational placement of agricultural crops for the harvest of 2019 and forecast volumes of production" and other regulatory legal documents related to this activity, this dissertation research is to a certain extent serves.

Today, cabbage, one of the most popular vegetable crops in the world, is 2.82 million. is grown on an area of more than one hectare. The average yield is 29.4 tons per hectare and the total yield is 82.8 million. tons. In Southern Europe, Central and South Asia, North and South America, and Australia, which have moderate climatic conditions and long warm days, this crop is grown mainly from seeds in a repeated crop. In order to meet the demand for white cabbage, it is important for agricultural producers to improve the technology of growing this crop as a repeated crop, in which research on determining the optimal planting period, the area of plant nutrition, fertilization and irrigation standards, as well as the selection of high-quality and high-yielding varieties and hybrids is relevant.

Currently, scientific work is being carried out on the further development of vegetable growing in repeated crops, in particular on increasing the yield and quality of white cabbage, choosing the variety-sowing period-sowing scheme system that maximizes the biological productivity of the varieties, applying the most optimal standards of fertilization and irrigation. N.N. Chernysheva, L.E. Soloveva, R.D. Almasker, A.S. Bolotskikh, S.V. Koroleva, S.V. Sitkinov, V.V. Skorina, V.F. Pivovarov, L.K. Gurkina, T.V. Lizgunova, V.A. Denisov, R.D. Almasker, I.D. Rajabli, N.B. Petrov, O.N. Vishnevskaya, A.F. Bukharov, L.I. Uralets, M.N. Shapturenko, V.N. Lukyanets, G.A. Kostenko, A.D. Dzhakhangirov, V.P. Kuzmishchev, G. F.Monakhos; scientific researches and recommendations were made by V.I.Zuev, O.Kadirkhojaev, B.J.Azimov, T.E.Ostonakulov, A.M.Abbasov, M.Kh.Aramov and many other scientists in our republic.

In this regard, it remains an urgent task to determine the optimal varieties of cabbage that can be grown in a repeated crop, their optimal planting scheme, timing, the development and implementation of the optimal standards of mineral fertilizers and irrigation for each variety, and its solution is on a large scale throughout the republic. allows to solve a number of problematic issues that allow to get a high and quality harvest from white cabbage in repeated cropping in areas empty of grain.

Researches B.J.Azimov, B.B.Azimov's "Methodology of conducting experiments in vegetable growing, rice growing and potato growing" (2002), "Metodika opytnogo dela v ovoshchevodstve i bakchevodstve" (1992), "Metodicheskie ukazaniya po ekologicheskomu ispytaniyu" ovoshchnyx kultur" (1987) was conducted based on the methods presented in the manuals.

The scientific significance of the research results: the growth and yield indicators of white cabbage grown in repeated crops in the conditions of long-irrigated meadow and meadow-gray soils of the Tashkent region were determined depending on the variety used for development, planting scheme, planting period, fertilization and irrigation standards. We selected promising options from the experiments conducted in 2007-2010 and conducted 3-factor complex

experiments in 2011-2013. In this case, the factor A variety; Factor V was the planting period and factor C was the planting scheme.

70×50 cm in 30.VI control in Sharqiya-2 variety. the weight of the leaves on the plant when using the planting scheme is 1.07 kg; 90×30 cm. in the scheme was 0.87 kg. Seedling 70×50 cm on June 15. When planted in the scheme, the weight of leaves (30.VI) is 112.1% higher than the control; 90×30 cm. in the scheme was 115.9%. Geant F₁ 30.VI in control option 70×50 cm. When planted in the scheme, the weight of leaves per plant is 1.30 kg and 90×30 cm. in the scheme was 1.23 kg. Seedlings are 70×50 cm when planted 15 days ago on June 15. leaf weight (1.40 kg) by 7.7% in the planting scheme; 90×30 cm. 19.5% heavier in the scheme.

Sharqiya-2 variety (30.VI) control option 70×50 cm. the height of cabbage in the planting scheme is 21.3 cm. and 90×30 cm. 19.0 cm in the scheme, 70×50 cm when the seedling is planted on June 15. the height of cabbage in the scheme is 24.7 cm. or 16.0 % compared to the control; 90×30 cm. in the scheme was 26.3% higher.

Geant F₁ hybrid (30.VI) seedling 70×50 cm in the control option. Cabbage height when planted in the scheme is 16.0 cm.; 90×30 cm. 15.0 cm in the scheme. has been Seedling 70×50 cm on June 15. when planted in the scheme, the height of cabbage compared to the control by 12.5%; 90×30 cm. in the scheme was 13.3% higher.

According to the methodical instructions, white cabbage varieties are divided into early, medium, and late ripening groups. The average weight of cabbage in early varieties is 0.8–2 kg; in medium varieties - 2-4 kg. and the average weight of cabbage in late ripening varieties is 3–8 kg. will be up to

In the description of the Sharqiya-2 variety, it is said that it is a late-ripening variety, the cabbage is tight, the shape is round, and the weight is 1.7 kg. The head of Geant F₁ hybrid is dense, round, and the average weight of the head is 4-6 kg. In our experiments, the planting period and planting schemes of the tested varieties showed their effect on the weight of cabbage.

Sharqiya-2 variety (30.VI) in the control option 70×50 cm. Cabbage weight 2.26 kg and 90×30 cm in the planting scheme. in the scheme was 1.85 kg. 70×50 cm on June 15. when the plant is placed in the scheme, the cabbage weight is 2.57 kg or 103.7% compared to the control; 90×30 cm. in the scheme was 1.85 kg or 110.8%. The difference between the schemes (30.VI) was 22.1% in the control option and 25.3% in 15.VI.

Geant F₁ hybrid (30.VI) seedling 70×50 cm in the control option. Cabbage weighs 2.62 kg and is 90×30 cm when placed in the scheme. in the scheme was 1.88 kg and the difference between them was 39.4%. Seedling 70×50 cm on June 15. Cabbage weight when planted in the planting scheme is 2.81 kg or 107.3% compared to the control; 90×30 cm. in the scheme was 2.05 kg or 109.0% compared to the control option. In this period, the difference between planting schemes was 137.0%. The effect of planting schemes on cabbage weight was stronger than the planting dates.

Effects of cultivars, planting period and scheme on cabbage weight and wet root weight (2011-2013)

Variety	Planting period	Planting scheme, cm.	Cabbage weight		Wet root weight	
			kg.	Ratio to control, %	g.	Relative to control, %
Sharqiya-2	15/VI	70×50	2,57	113,7	168	103,7
		90×30	2,05	110,8	172	103,6
	30/VI control	70×50	2,26	100,0	162	100,0
		90×30	1,85	100,0	166	100,0
Geant F ₁	15/VI	70×50	2,81	107,3	146	106,6
		90×30	2,05	109,0	151	108,6
	30/VI control	70×50	2,62	100,0	137	100,0
		90×30	1,88	100,0	139	100,0

When studying the effect of planting time and the number of seedlings per hectare on the yield of varieties and hybrids, factor A (variety); V (planting period) factor and S (planting pattern) factor. The minimum significance

difference for factors A and V (EKMT05) is 4.4 t at the 5% level; According to S and AS, VS and AVS, EKMT05 was also 4.4 t. The accuracy of the experiment was S -4.0%. They were convincing because the difference between the yield of the control variant and other planting schemes was higher than that of EKMT05 at both planting dates in cultivar and hybrid

Effect of planting time and planting schemes on the yield of white cabbage varieties (2011-2013)

Variety	Planting period	Planting scheme, cm.	Productivity, t/ha			Average	Relative to control, %
			2011	2012	2013		
Sharqiya-2	15/VI	70×50	77,5	75,3	66,7	73,2	113,5
		90×30	79,4	77,6	71,0	76,0	110,6
	30/VI	70×50	68,3	66,4	58,8	64,5	100,0
		Control	90×30	74,6	70,1	61,4	68,7
Geant F ₁	15/VI	70×50	84,6	81,2	74,5	80,1	107,4
		90×30	77,8	78,8	71,3	76,0	109,0
	30/VI	70×50	75,4	77,9	70,6	74,6	100,0
		Control	90×30	71,3	73,4	64,4	69,7
<i>EPT₀₅</i>	<i>A and B омиллар</i>		<i>4,4</i>	<i>3,7</i>	<i>3,0</i>		
<i>EPT₀₅</i>	<i>C and AC, BC and ABC</i>		<i>4,4</i>	<i>3,7</i>	<i>3,0</i>		
<i>Accuracy of experience S\bar{x} %</i>			<i>4,0</i>	<i>3,4</i>	<i>3,1</i>		

In this experiment, when the number of plants decreased from 37 thousand (90x30 cm.) to 28.5 plants (70x50 cm.) in the Sharqiya-2 variety of white cabbage, the yield decreased proportionally. In the Geant F1 hybrid, the yield per hectare was higher in the variant planted with 28.5 thousand plants (70x50 cm) compared to the variant with 37 thousand plants (90x30 cm). Although A and V factors EKMT05 and C and VS and AVS indicators were the same 3.7 t, the yield depended more on the planting period and less on the planting scheme. The average yield for variants is reliably higher than EKMT05. The accuracy of the experiment S X was high (3.4%).

Geant F1 hybrid (30.VI) in control version 70x50 cm. 70.6 tons per hectare when planted in the scheme, 90x30 cm. 64.4 tons were harvested in the scheme, the difference between them was 9.6%. Seedling 70x50 cm on June 15. when planted in the scheme, the yield was 74.5 t/ha, which was 5.5% more than the control. 90x30 cm. when planted in the scheme, the yield was 71.3 tons, 10.7% higher than the control, and the difference between eKish schemes was 4.5%.

EKMT05 3.0 t according to factors A (variety) and V (planting period); EKMT05 was 3.0 t for S (planting scheme) and AS, VS and AVS factors. The accuracy of the experiment was 3.1%. The relationship of the correlation coefficient between the cabbage weight and the yield of varieties, planting period and planting schemes was strong (r=+0.77±0.26) and reliable for the correct correlation.

The three-year average productivity of the Sharqiya-2 variety is 70x50 cm in the June 30 control variant. 64.5 tons per hectare in planting scheme, 90x30 cm. in the scheme was 68.7 tons and the yield difference between them was 6.5%. Seedling 70x50 cm 15 days before control on June 15. when planted in the scheme, the yield is 13.5%, 90x30 cm. in the scheme (76.0 t/ha) was 10.6% higher. The difference in the yield of the schemes planted during this period was 3.8%.

The yield of Geant F1 hybrid was 74.6 t/ha when 28.5 thousand seedlings were placed per hectare in the June 30 control variant, and 69.7 t/ha when 37.0 thousand seedlings were planted, and the difference in yield between them was 7.0%. Seedlings planted on June 15, 70x50 cm. when the scheme is used, the yield is 80.1 t/ha, 90x30 cm. in the planting scheme was 76.0 t/ha and they were 7.4 and 9.0% higher than the control options, respectively.

The cost of 1 ton of product is the cheapest: the Geant F1 hybrid was 157.9 - 161.4 thousand soums in the options planted on June 15-30 in the 70x50 cm scheme, and the Sharqiya-2 variety was 164.7 thousand soums in the option planted in the 70x50 cm scheme on June 15. The cost of the product decreased by 13.2–18.0% in the variants with

high productivity, and the profitability level in the Sharqiya-2 variety is in the range of 51.8–41.3% according to the variants; The Geant F1 hybrid fluctuated between 58.3%–41.6%.

CONCLUSION

1. In the experiment, compared to the planting schemes of white cabbage variety and hybrid, when seedlings were planted on June 15, cabbage weight was 113.7 - 110.8% in Sharqiya-2 variety and 107.3 - 109.4% in Geant F₁ hybrid. Productivity in the Sharqiya-2 variety (30/VI) in the control variant is 70×50 cm. three-year average yield in the planting scheme is 64.5 t/ha and 90×30 cm. in the scheme was 68.7 t/ha. (30.VI) compared to the control, when the seedling is planted on June 15, the yield is 90×30 cm. scheme was 13.5 and 10.6% higher, respectively. Geant F₁ hybrid (30.VI) had 7.4 and 9.0% higher yield in planting schemes when seedlings were planted on June 15. The cost per ton of product was 18.0 and 13.2% lower in the high yield options. The rate of profitability in the Sharqiya-2 variety is 51.8–41.3% according to options; The Geant F₁ hybrid ranged from 58.3%–41.6%.

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