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TECHNOLOGY OF CULTIVATION OF PEKING CABBAGE IN VARIOUS SCHEMES

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Abstract:

In the Republic, cultivation of Peking cabbage has not enough scientifically-based recommendations on nutrition and placement methods, so many scientists and practitioners have been experimenting with the most delicate habitats in cultivating Peking cabbage and achieving high productivity. In our research, we obtained a 70×30 cm planting scheme as a comparative option."Xibinskaya" sort of the Peking cabbage was identified on the basis of crop yields and economic efficiency of 2016-2021, which was cultivated on 7 different schemes, as a replica.

The article describes the results of experiments on determining the best nutrition of Peking cabbage.

Keywords: Peking cabbage, sort, hybrid, cabbage head, yield, early maturing, nutrition area, leaf, leaf surface, cabbage weight.

INTRODUCTION

Vegetables contain more than a dozen vitamins, mineral salts, enzymes, phytoncides, and other biologically active substances, which can be used to increase people's longevity and ability to work.The most favorable or optimal nutritional area is not the ability of the plant to accumulate the highest harvest, but the least cost per hectare of crops, and the highest quality yields. Therefore, this issue is constantly being pursued by the scientists of the plant science and is mutually engaged in it. [1]

The area of feeding is a field of land that is occupied by plant in the field, the plant thickness or scarcity is the number of plants in that hectare. The most suitable nutrition area depends on sowing and its varieties, as well as on external factors and used technology. As mentioned above, the plant nutrition area has long been interested many scientists and practitioners in plant growing. The efforts to deeply and accurately study this issue began in the mid-19th century.[2]

In the United States, Peking cabbage is grown between 45-60 cm in rows between 30-45 cm in the row of plants, and on the islands of Mauritius, the plants are placed in 60×60 cm. On the island of Taiwan, it is grown in the rows of 50 cm width while on the island of Puerto Rico it is cultivated 90x25-30 cm. [3]

METODICS. EXPERIMENT METHODS.

In our country, there is not enough scientifically-based recomndations on the nutrition and placement methods on cultivation of cabbage, so we have taken the scheme of 70×30 cm as a comparative option in our researches. Field experiments were carried out on the field of experimental farming of the Plant Research Institute in 2015-2017, observations, measurements and calculations parts carried out in four repeats 70 cm between raws, 10 m long consisting 7 m^2.[4,5]

THE RESULTS OF THE EXPERIMENT.

We have tested the following spacing intervals in our field experiments to determine the beijing cabbages nutrition and nutrition habits: 70×20; 70×25; 70×30; 70×35; 70×40; 70×45; 70×50 cm, The area of feeding seedlings when they are placed in such a range of 0,140; 0,175; 0,210;0,245; 0,280; 0,315; 0,350 $м^2$ respectively.

Planting seedlings of Peking cabbage with a distance of 70×20 cm indicates that it will be 150% more compared to an option compared to the number of plants in the hectare (70×30 cm). In the 70×45-50 cm range of seedlings, the number of crops in the area decreased by -66,7-60,0%, respectively.

Results of biometric measurements show that the intensified planting of plants (1 variant) was lower by 95,5% compared to the number of leaves (variants)

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and by 112,5-113,7% more than that of controlling the number of leaves 6-7 variants (Table 1).

Table 1.
The influence of the nutritional field on the Peking cabbage plants leaf growing. (2015-2017 yy).

The nutritional area of a bush of plant, m^2	Plants in a hectare		The leaves in a bush of plant		The largest leaf length, cm
	Number, pieces	compared to the control, %	Number, pieces	compared to the control, %	
0,140	71,428	150,0	23,7	95,6	32,0
0,175	57,142	120,0	24,1	97,2	33,2
0,210 control	47,619	100	24,8	100	34,8
0,245	40,816	85,7	25,7	103,6	35,2
0,280	35,714	75,0	26,8	108,0	37,9
0,315	31,746	66,7	27,9	112,5	39,9
0,350	28,571	60,0	28,2	113,7	41,8
NSR_{05}			**1,08**		**1,85**
Sx,%			**3,0**		**3,58**

In experimental feeding areas, plants were found to form leaves at different sizes. The largest leaf was found in the nutritional area of 0,315-0,350 m^2. The size of the leaves in these variants increased by 0,105-0,140 cm relative to the option (0,210 m^2).It should be noted that in the densely planted plants, the size of the leaf compared to the control was less than -2,8-1,6 cm. The surface area of the leaves is enlarged due to the increase in the area of nutrition of the plants. Table 2.

Table 2.
The influence of nutrition on the formation of vegetation on leaf surfaces.
(2016-2017 yy).

Plant nutrition area,m^2	number of plants on hectare Thousand pieces	Leaf surface			
		in the bush		on the hectare	
		dm^2	In comparison with control, %	m^2	In comparison with control, %
70×20	71,4	44,5	79,7	317,7	119,6
70×25	57,1	50,6	90,7	288.9	108,8
70×30 control	47,6	55,8	100	265,6	100
70×35	40,8	62,2	111,5	253,8	95,5
70×40	35,7	68,8	123,3	245,6	92,5
70×45	31,7	74,7	133,9	236,8	89,1
70×50	28,6	78,9	141,4	225,6	84,9
NSR_{05}		**1,96**		-	
Sx,%		**3,14**		-	

According to the data in Table 3, the decrease in the nutritional value of the Peking cabbage (in variant 1) has shown that the number of different plant leaves is reduced to -79,7 percent compared to the comparison. In the sprouting area of the large (0,350-0,315 m^2) area, the surface area of the plant has increased by 141,4-133,9%, however, the surface of leaves was increased in the smallest space (70×20;), taking into account the number of plants on the hectare of the plant surface of the herbaceous leaves.

As the Peking cabbage seedlings are expanded to the field, the potential for the use of light energy increases due to the expansion of the nutritional area of the soil, thanks to the nutrients from the soil, the gas regimes and, in particular, the increase of the plant's assimilating surface.

In the phenological observations, the period of formation of the cabbage heads did not have a major impact on the duration of the head packing due to the

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reduction of the vegetation area or the thickness of the seedlings.

Table 3
Growth and development of Peking cabbage grown in different nutritional fields. (2015-2017 yy).

Nutrition area, m^2	number of plants, units /ha	The time elapsed before cabbage heads begun to develop	The time passed from planting to maturation	Head development time, days
0,140	71,4	85	115	42
0,175	57,1	83	112	41
0,210 control	47,6	81	108	40
0,245	40,8	80	104	38
0,280	35,7	80	102	37
0,315	31,7	79	99	36
0,350	28,6	77	97	36

As the area of nutrition increases, the number of bushes in the hectare decreases. It has been found that the cultivated plants grow in the area of large nutrition fields are relatively earlier maturing for 2-4 days than control plants, but the difference was not noticeable in the studied varieties. If in the largest nutritional area 77 days required to cabbage head wipening and 97 days for maturation, thn this result in control variaty was 81 and 108 days.

The ability of plants to have different absorption surfaces on different nutritional areas, their differences in growth and development, the formation of different accelerators, and the impact on cabbage heads development levels the quantity and quality of the product.

Table 4
The effect of nutrition area on Peking cabbage yield. (2015-2017 yy).

The nutritional area of a bush of plant, m^2	Number of plants on hectare thousand pieces	Average weight of cabbage head, kg	The total harvest, t/ha	Additional yield in comparison with control		quality product quantity, %
				t/ha	%	
0,140	71,4	0,62	38,2	3,2	109,1	79,0
0,175	57,1	0,74	36,6	1,6	104,6	80,0
0,210 control	47,6	0,84	35,0	-	100	82,8
0,245	40,8	0,97	34,6	-0,4	98,8	83,2
0,280	35,7	1,09	34,0	-0,1	97,1	85,9
0,315	31,7	1,15	32,2	-2,8	92,0	86,9
0,350	28,6	1,24	31,4	-3,6	89,7	87,3
NSR_{05}		**0,14**	**1,96**			
Sx,%		**4,95**	**4,02**			

Largest cabbage heads by cabbage head weight formation was observed in the sparse areas (28,5-31,7 thousand). Cabbage heads formed there were heavier compared to control option (47,6 million) to 310-400 grams, or 147,6%. The smallest heads are at the areas where the seedlings are densely planted. When placing 71,4 thousand seedlings at the expense of conditional area, their shaped cabbage heads were lighter by 220 g or -73,8% relative to control. Because of the lack of light and nutrient content on the fields where the crops are found to be extremes, the weight of the cabbage heads does not seem to be heavy, but because of the large number of cabbage, the amount of yield is much higher.

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In the feeding areas, where heavy cabbage heads are formed, the quality of the product is higher than other options.

The highest yields were taken from a variant of 71,4 thousand plants, which were taken from the conditional area. The crop yielded 38,2 tonnes, up 3,2 tonnes or 109,1% more than control.

The difference between the most sparse and most sophisticated varieties of plants was 6,8 tonnes. It has been established that the area of nutrition of plants can be increased to a certain extent. In the most densely populated version there was a decrease in cabbage weight and product quality.

Thus, the increase in plant thickness by 23,8 thousand more than the control of the plant has a negative impact on the quality of its products and, conversely, the decrease in the number of plants by 19,0 thousand hectares, increase the quality of the cabbage and the quality of products.

Economic efficiency of cultivation of Peking cabbage on different planting schemes as a secondary crop.

The economic efficiency of the Xibinskaya variety of Peking cabbage produced in 7 different schemes was determined on the basis of the technology card 2016-2021 (Table 1).

Table 5.
Economic efficiency of cultivation of Peking cabbage on different planting schemes in the second period.

t/r	Indicators	Planting schemes.						
		70×20	70×25	70×30 control	70×35	70×40	70×45	70×50
1.	2	3	4	5				6
2.	Direct costs: land preparation for sowing	502,1	502,1	502,1	502,1	502,1	502,1	502,1
3.	Costs for seeds seedling preparation, sums	6,871.5	5,495.4	4,581.0	3,926.5	3,335.7	2,920.7	2,772.4
4.	Sowing and care, Soum	8,471.5	6,774.8	5,647.7	4,840.8	3,631.1	3,139.6	3,073.01
5.	Harvesting, soums	1,094.9	1,062.2	1,051.4	1,044.1	1,058.6	1,015.1	993,387
6.	transportation of the harvest	1,168.0	1,133.3	1,121.7	1,113.9	1,129.4	1,083.0	1,059.8
7.	Total expenditures, soums	18,108.0	14,967.8	12,903.9	11,427.4	9,656.9	8,660.5	8,400.6
8.	Direct expenses, soums 25%	4,527.0	3,741.9	3,22.0	2,856.8	2,414.2	2,165.1	2,100.2
9.	The total expenses soums	22,635	18,709.7	16,129.9	14,284.2	12,071.1	10,825.6	10,500.8
10.	Quality yield, t/hec.	30,2	29,3	29,0	28,8	29,2	28,4	27,2
11.	Cost of production, soums	700	700	700	700	700	700	700
12.	Harvest price is at the hectare	21,140	20,510	20,300	20,160	20,440	19,880	19,040
13.	The cost of 1 t	749,4	638,5	556,2	496	413.4	381,2	386,0
14.	Net Profit, Soum	-1,495	1,800.3	4,170.1	5,875.8	8,368.9	9,054.4	8,539.2
15.	Profitability , %	-6,6	9,6	25,8	41,1	69,3	83,6	81,3

From the figures given in Table 5, the funds spent on the land and its preparation for sowing were the same in all planting schemes (502,100 soums). However, the costs for seedlings production amounted to 6,871.5 soums in the 70×20 cm plan.

The increase in the number of seedlings found in the area due to the decrease in the area of studying nutrition showed that the expenditure on it increased from 2,752.4 thousand to 6,871.5 thousand soums.

As a result, the total cost of payment for these schemes varies from 10,400.9 thousand to 22,635 million soums. The thick or sparse sowing of Peking cabbage affects its yield on the surface. In the studied planting scheme, the highest yields (38,2 t/ha) were obtained from the planting of 70×20 cm.

The yield from this nutritional site was greater than 6,6-8 t/ha relative to other variants (70×45, 50 cm) compared to 2,2 t/ha compared to 70×30 cm. The cheapest cost of a kg harvest was 70×50 cm, which was 176,6 sums lower than the control version, and the next 70×20,25,35,40,45 cm was 21,8-369,8 sums it was low. In the version of 70×20 cm, the control was up 193,2 soums more.

When cultivating the Peking cabbage in a variety of planting schemes, the highest net profit yielded a 70×45 cm planting scheme. The net profit gained from

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it was 9,054.400 soums, which was 4,884.300 soums more than the controlling option.

CONCLUSIONS

1. The largest leaf was found in the nutritional area of 0,315-0,350 m^2.
2. In the sprouting area of the large (0,350-0,315 m^2) area, the vegetation surface has increased by 141,4-133,9%, but the maximum number of plants in the hectare is determined by the smallest (70×20;) the surface of the leaves has increased.
3. Because of the lack of light and nutrient content on the fields where the crops are found to be too close in raw, the weight of the cabbage heads does not seem to be heavy, but because of the large number of cabbage, the amount of yield is much higher.
4. The highest net profit per unit area is 70×45 cm. The net profit gained from it was 9,054.400 soums, which was 4,884.300 soums more than the controlling option. Thus, when planting "Xibinskaya" sort of Peking cabbage in a 70×45 cm scheme on repeated terms allows to receive the highest net income.

BIBLIOGRAPHY.

1. Zuev VI, O.K. Kodirkhujaeva head. "cabbage head vegetable crops". The book of Vegetable and Gardening. Tashkent. Economics and Finance, 2010y, pp. 256-257.
2. Kolpakov N.A. "Yield of Peking cabbage at various terms of cultivation" NGAU-1 [26] p. 26-27. 2013
3. Pivovarov P.F., Kononkov P.F., Nikulshina V.A. New on your table. M-Kolos. 1995 pages 222-225.
4. Dospekhov B.A. Methodology of the field expirience.-M: Kolos, 1985. pages 272-287
5. Azimov B.J., Azimov B. B. "Methods of conducting vegetable, melon and potato experiments" .- T. National Encyclopedia of Uzbekistan, 2002, pp. 180-198.