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Title: AGROTECHNIKAMI CULTIVATION OF PEKING CABBAGE IN THE SUMMER TERM

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AGROTECHNIKAMI CULTIVATION OF PEKING CABBAGE IN THE SUMMER TERM

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Annotation: The article presents the results of research conducted at the Department of Vegetable, Melon and Potato growing of the Tashkent State Agrarian University to establish the optimal terms for planting seeds of Peking cabbage as repeated culture. As a result of the research, it was found that the best time for planting seeds with repeated culture is the middle of the third decade of July.

Keywords: Peking cabbage, seeds, planting time, air temperature, head of cab, formation, average weight of head, early harvest, total harvest.

INTRODUCTION

Peking cabbage is an annual lettuce plant, and is a distinct species (*Brassica pekinensis*). [6]

The popularity of Peking cabbage is due to its high taste, diet and nutritional properties. With a dry matter content of 5-10 %, it accumulates up to 2,4 % of sugars, up to 3,5 % of crude protein, and many mineral elements, especially magnesium, phosphorus, calcium, and potassium.

It is also rich in vitamins A, C, B1, PP1. Peking cabbage is useful for heart disease and gastric ulcer. [3;4]

Peking cabbage is distinguished by its early ripeness and cold resistance, which allows it to be grown in secondary culture after harvesting cereals, early potatoes and vegetables. Cultivating it in repeated culture contributes to a more rational use of irrigated land and providing the population with valuable dietary products in the autumn period.

For Uzbekistan, Peking cabbage remains a less common culture, although culture is carried on in the 60 of the last century. One of the reasons for the inadequate cultivation of this crop in the summer-autumn period is the lack of scientifically grounded recommendations on the technology of growing it in repeated culture. However, re-culture has its own characteristics.

So its vegetation occurs in the conditions of gradual decrease in temperature. Therefore, it is especially important to experimentally establish the optimal time for planting seedlings in repeated culture.

Objects and research methods. Given this need, we compared in 2015-2017 at the experimental station of the Scientific Research Institute of Plant Cultivation under the conditions of repeated culture after harvesting winter wheat, 4 terms of planting in the ground: July 1, July 10, July 20, August 1, August 10. Experiments were carried out with Russian variety Khibinskaya, adopted in Uzbekistan.

The soil of the experimental plot is located on the upper terrace of the Chirchik River and is represented by non-saline, typical sierozem with deep (6-8 m) groundwater storage. [1]

The humus content is 0,86-1,07, total nitrogen 0,083-0,101, phosphorus 0,092-0,129 and total potassium 1,60-1,80%.

The climate of the zone is sharply continental, arid with dry hot summer and humid unstable winter. It is characterized by large temperature differences in annual and daily cycles.

Dryness is expressed in a small amount of precipitation (250-500 ml per year) and precipitation occurs mainly in the winter and spring periods. [5]

The air temperature for the years of research was close to the average multiyear data with small variations over the years.

The hottest month was July 2017, the average daily air temperature exceeded the average multiyear average by 0,8-1,2 °C.

When laying the experience were guided by the methodology of field experience of B.A. Dospekhov. [2]

For each planting period, seeds were grown separately. Sowing of seeds for receiving potted seedlings was carried out 30 days before the planned planting time. The seedlings were planted at the age of 30 days.

Field experiments were carried out in 4x replicates with a plot area of 7 m², two row plots, 5 m long. The plant layout is 70×30 cm.

Field experiments were accompanied by phenological observations, biometric counts, the determination of the average weight and marketability of heads, taking into account yield. [7]

Research results. Conducting phenological observations showed that the earlier the transplanting was carried out into the ground, the earlier the production began, and the longer it went (Tab-1.)

1-table.

The pace of development and foliage of Peking cabbage plants at different periods of summer planting. 2015-2017

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Terms of planting seeds	Harvest Dates		The number of days from planting to the first harvest	Duration of fruiting period, days	The average daily temperature of the period of "planting and collecting" °C	Number of leaves; pcs / plant	The length of the largest leaf, see	The sum of effective temperatures for this period.
	First	last						
1 July	29/X	14/XI	119	29	25,5	25,1	33,7	645
10 July control	7/XI	24/XI	120	31	23,1	24,7	34,4	634
20 July	11/XI	26/XI	114	28	20,8	25,4	35,6	523
1 August	30/XI	18/XII	122	32	19,2	25,2	35,2	325
10 August	13/XII	-	125	35	18,8	24,1	34,2	356
HCP ₀₅						1,03	1,34	
P%						4,13	3,87	

During the first two periods of planting of seeds, no significant difference in the rates of plant development was observed; upon planting on July 20 -1 August, the duration of the "planting-first harvest" period was reduced, since plant development occurred at more favorable temperatures.

However, from mid-October, the temperature fell well below the optimum. During this period, the plants of the first two planting dates complete the growing season, gaining a sufficient amount of effective temperatures.

The plants of the remaining terms continue to grow. Especially plants planted in August 1-10 do not gain a sufficient set of effective temperatures, form a smaller number of leaves and a relatively smaller size.

From the end of October, the temperature was more lowered and the formation of heads in these plants of the last planting dates slowed down a lot, many of them do not reach the standard size and remain subspecific.

As shown by the account for determining the average weight of heads, it is significantly less for the last August term than for the first one in July. In addition, the number of plants that did not reach the August term (August 10) for planting increased significantly.

Owing to a decrease in the average weight of heads and lower marketability, despite lower erosion, during the August planting, the yield per unit area decreased 1,4–1,5

times as compared with the July planting dates. Yield at the time of planting of seeds on July 10 and 20 was significantly higher.

The highest yield (an average of three years 35,7 t / ha) was formed when the seeds landed on July 20.

The increase in yield by the first planting date (July 1) was 2,1 t/ha or 6,2 %. At this time of planting, due to more favorable temperatures, the largest heads of cabbages formed during the period of growth and the yield of heads of goods was higher. (tab. 2)

Table 2.

The average weight, marketability and yield of Peking cabbage heads at different periods of summer planting. 2015-2017

Terms of planting seeds	Heads of cabbage		Yield, t/ha.				
	Average weight kg	Marketability, %	2015	2016	2017	Average	
						t/ha	% for the first term
1 July	0,81	77,4	34,8	31,8	33,6	33,4	96,8
10 July - control	0,83	81,7	35,2	33,8	34,6	34,5	-
20 July	0,85	83,2	34,9	36,5	35,7	35,7	103,5
1 August	0,79	82,4	34,2	31,6	33,2	33,0	95,6
10 August	0,26	76,9	4,8	5,6	5,2	5,2	15,1
HCP ₀₅	0,15		1,98	2,00	2,25	1,33	
P%	3,7		3,87	4,19	3,90	4,70	

The statistical analysis of yield data showed that the experiments were carried out with sufficient accuracy, and the difference in yield between successive planting periods in all years of research was reliable and significantly exceeded the smallest significant difference.

Conclusions. Our studies to determine the optimal time for planting seeds of Peking cabbage during re-culture for the conditions of the central area of Uzbekistan allow us to draw the following conclusions:

1. Vegetation of plants of repeated culture of Peking cabbage takes place under conditions of a gradual decrease in temperature. From mid-October, the temperature becomes insufficient for this plant.

2. As a result, the high yield of Peking cabbage during re-culture is formed if the harvest of heads of cabbages begins in mid-October. Sufficient for this duration of the growing season is when planting seeds in the second half of July.

3. When planting on August 10, the first harvest occurs in the middle of the third decade of December. These plants do not gain a sufficient number of effective temperatures, form much less leaves and smaller cabbages, give a lot of plants underrapen, and in total their yield decreases.

4. The best time for planting seeds of Peking cabbage for repeated culture for the central area of Uzbekistan is the middle of the third decade of July.

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