TECHNOLOGY FOR GROWING PEKING CABBAGE FROM SEEDLINGS IN A REPEATED PERIOD

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ANNOTATION

The article presents the results of research carried out at the department"Vegetable growing, melon growing and potato growing" of the Tashkent State Agrarian University to establish the optimal timing for planting Peking cabbage seedlings in re-culture. As a result of the studies carried out, it was revealed that the most optimal time for planting seedlings with repeated culture is the middle of the second decade of August.

Key words: seeds, seedlings, peking cabbage, heads of cabbage, average weight, temperature, yield, marketability.

INTRODUCTION

A healthy, nutritious diet involves consuming a wide variety of vegetables throughout the year. This can be achieved by including less common vegetable crops in the diet and cultivating them with repeated cultivation. One of these crops is Peking cabbage.

This valuable vegetable crop is of great importance in the organization of a healthy diet, because it is rich in biologically active substances and mineral salts.

Peking cabbage is distinguished by its early maturity and cold resistance, which allows it to be re-cultured after harvesting cereals, early potatoes and vegetables. Its cultivation in repeated cultivation contributes to a more rational use of irrigated lands and the provision of the population with a valuable dietary product in the late autumn period [1].

At present, Peking cabbage is cultivated in Uzbekistan in small areas.

One of the reasons for the insufficient cultivation of this crop in the summer-autumn period is the lack of scientifically grounded recommendations on the technology of growing in a repeated culture.

At the same time, the repeated culture has its own characteristics. So its vegetation occurs under conditions of a gradual decrease in temperatures. Therefore, it is especially important to experimentally establish the optimal timing of planting seedlings of new zoned foreign hybrids [2].

RESEARCH METHODOLOGY

Given this need, in 2015-2017 we will at the experimental training and experimental station of the Research Institute of Plant Growing under the conditions of re-culture after harvesting winter wheat, five terms of planting seedlings in the ground were compared: 1, 10, 20 August and 1, 10 September.

The experiments were carried out with the Russian varieties of Khibinskaya zoned in Uzbekistan. For each planting date, seedlings were grown separately. Sowing seeds for seedlings was carried out 35 days before the planned planting date. Seedlings were planted at the age of 30 days.

The experiments were carried out in 4-fold repetition with the registration plot area of 7 m^2. Two-row plots, 5 m long, the arrangement of plants is ordinary 70 × 30 cm. Field experiments were accompanied by phenological observations, biometric counts, determination of the average weight and marketability of heads of cabbage, taking into account the yield [3; 4; five].

RESEARCH RESULTS

The carried out phenological observations showed that the earlier the seedlings were planted in the ground, the earlier the production began, and the longer it took (Table 1).

Table 1.

The rate of development and leafiness of Peking cabbage plants at different dates of summer planting (2015-2017)

Seedling planting time	Harvest dates		Days from planting to first harvest	Duration of the fruiting period, days	Average daily temperature of the period << landing - 1 collection >>, ^{0}C	The sum of effective temperatures for this period	Number of leaves, pcs / plant	Length of the largest sheet, cm
	the first	the last						
1 august	29/X	14/XI	89	16	22,3	927	25,1	33,7
10 august	7/XI	24/XI	90	17	20,3	741	24,7	34,4
20 august	11/XI	26/XI	84	15	18.0	580	25,4	35,6
1 september	30/XI	18/XII	92	18	15,3	321	25,2	35,2
10 september	13/XII	-	95	-	13,0	281	24,1	
ECTF 05 t/ha							**1,03**	**1,34**
Sx,%							**4,13**	**3,87**

During the first three August dates of planting seedlings, no significant differences in the rates of plant development were observed, while when planting in September, the duration of the "planting-first harvest" period increased, because the development of plants took place at lower temperatures. However, since mid-October, the temperature has dropped significantly below the optimum. During this period, the plants of the first three planting dates complete the growing season, having gained a sufficient number of effective temperatures. Plants of the September planting period continue their growing season, without a sufficient set of effective temperatures, form a smaller number of leaves and a relatively smaller size. From the end of October, the temperature dropped even more. The formation of heads of cabbage in plants of the last planting date is greatly slowed down, many of them do not reach the standard diameter and remain non-marketable.

As the determination of the average weight of heads of cabbage has shown, it is significantly less for the last September planting period than for the first August one. In addition, the number of under-catch plants at the September planting date increases significantly. If on two August planting dates (August 10 and 20) it is 16-18%, then in August it increased to 23%.

Due to a decrease in the average weight of heads of cabbage and their lower marketability, with the September planting period, the yield per unit area compared with the August planting dates decreased by 4,1-7,2%.

The highest yield (on average 35,7 t/ha over three years) was formed when the seedlings were planted on August 20. The increase in yield by the first planting date (August 1) was 2,3 t/ha or 6,9%, and the second (August 10) – 1,0 t/ha or 3,3%. At the same time, the planting dates, due to more favorable temperatures during the growing period, formed the largest heads of cabbage and the marketable yield was higher (Table 2).

Table 2.

Average weight, marketability and yield of Peking cabbage at different dates of summer planting (2015-2017)

Seedling planting time	Kochani		Productivity, t/ha			average	
	Average weight, kg	Marketabilit, %	2015	2016	2017	т/га	% by the first term
1 август	0,81	77,2	34,8	31,8	33,6	33,4	100
10 август	0,83	81,7	35,2	33,8	34,6	34,5	103,3
20 август	0,85	83,2	34,9	36,5	35,7	35,7	106,9
1 сентябр	0,79	82,4	34,2	31,6	33,2	33,0	98,8
10 сентябр	0,26	76,9	4,8	5,6	5,2	5,2	84,4
ЭКТФ 05 т/га	-	-	**1,98**	**2,00**	**2,25**	**1,33**	
Sx,%	-	-	**3,87**	**4,19**	**3,90**	**4,70**	

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

CONCLUSIONS

Our studies to identify the optimal time for planting seedlings with repeated cultivation of Peking cabbage allow us to draw the following conclusions:

1. The vegetation of plants of the repeated culture of Peking cabbage proceeds under conditions of a gradual decrease in temperature. From mid-October, the temperature becomes insufficient for this plant.
2. As a result of this, a high yield of Peking cabbage with repeated cultivation is formed if the collection of kachons begins in mid-October. A sufficient growing season for this happens when planting seedlings in the second half of August.
3. When planted on September 10, the first harvest falls in the middle of the third decade of November. These plants do not gain a sufficient number of effective temperatures, they form significantly fewer leaves and smaller heads of cabbage produce many under-catch plants, and as a result, their yield decreases.
4. The most optimal time for planting Peking cabbage seedlings with repeated cultivation is the middle of the second decade of August.

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