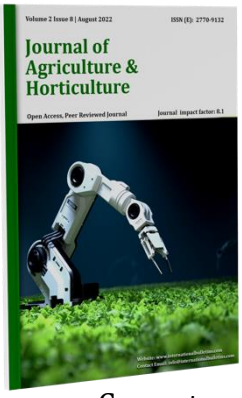

RESEARCH ON THE EFFECT OF SUITABLE PLANTING SCHEMES ON THE AGRO-BIOLOGICAL CHARACTERISTICS OF THE WHITE CABBAGE PLANT

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Correct selection and timely implementation of agrotechnical measures in the cultivation of vegetable crops, including white cabbage, in weakly saline soil-climate conditions is the guarantee of a high yield. At the same time, in the cultivation of varieties and hybrids of white cabbage isolated from the collections, their rejuvenation and proper distribution of the feeding area directly affects the growth period of the crop, resistance to various diseases and pests, resistance to extreme factors of the external environment, and most importantly, obtaining a high-quality harvest.

White cabbage is planted in the open field in early spring (February-March) or as a repeat crop (June-August). The seed is sown on floors or in cassettes.

In our research, we studied the following optimal planting schemes and plant nutrition area during spring planting of white cabbage: 70x30 cm (0.21 m^2) (control), 70x40 cm (0.28 m^2), 70x50 cm (0.35 m^2), 60x30 (0.18 m^2) and 60x40 cm (0.24 m^2).

During the research (2022-2023), we determined the number of interphase leaves and leaf weight of white cabbage varieties and hybrids placed in different planting schemes (see Table 1).

When the Navruz variety is planted in a 70x30 cm scheme (c), the average number of leaves after planting is 8.0 pieces, when planted in a 70x40 cm scheme, 8.1 pieces, in a 70x50 cm scheme, 8.4 pieces, in a 60x30 cm scheme, 8.6 pieces, and finally in a 60x40 cm scheme when planted, it was 8.4 pieces. It was found that the number of leaves in the Tashkentskaya 10 variety according to the options was slightly reduced to 7.3-7.7 pieces compared to the Navruz variety.

Table 1

The effect of the planting scheme on the number of leaves in the white cabbage plant, 2022-2023

Planting scheme, cm	In the period when the seedlings are caught, pcs	When the cabbage begins to ripen, grain	When harvesting		Leaf weight	
			pcs	relative to the control, %	gr	relative to the control, %
Navruz						
70x30 con	8,0	13,5	16,9	100,0	1164,6	100,0
70x40	8,1	13,4	16,9	100,0	1177,2	101,0
70x50	8,4	13,7	17,3	102,3	1214,4	104,2
60x30	8,6	14,4	17,8	105,3	1254,9	107,7
60x40	8,4	13,9	17,4	102,9	1218,7	104,6
Tashkentskaya 10						
70x30 con	7,3	14,7	18,3	100,0	2194,4	100,0

70x40	7,2	14,9	18,2	99,4	1985,6	90,4
70x50	7,1	14,6	18,2	99,4	2126,6	96,9
60x30	7,7	15,5	19,1	104,3	2317,0	105,5
60x40	7,4	14,9	18,8	102,7	2241,3	102,1
Magnus F_1						
70x30 con	7,8	12,9	16,1	100,0	1609,6	100,0
70x40	7,8	12,5	16,1	100,0	1602,1	98,7
70x50	7,8	12,7	16,4	101,8	1576,3	94,5
60x30	8,1	13,2	17,0	105,5	1611,6	100,3
60x40	7,9	12,9	16,7	103,7	1587,2	96,3
Fresco F_1						
70x30 con	6,9	14,0	17,4	100,0	1678,1	100,0
70x40	7,3	13,6	17,5	100,5	1682,2	100,2
70x50	7,4	13,7	17,6	101,1	1705,3	101,6
60x30	7,9	14,3	18,4	105,7	1983,9	118,2
60x40	7,2	13,6	17,8	102,2	1820,3	108,4

The number of leaves in the Navruz variety at the beginning of picking was 14.4 pieces when planted in a 60x30 cm scheme, and Tashkentskaya 10 variety recorded a little more, 15.5 pieces.

When the number of leaves was counted again at the time of harvest, it was 16.9 pieces in the Navruz variety in the control option, and 17.8 or 105.3% compared to the control when planted in a 60x30 cm scheme. In Tashkentskaya 10 varieties, it was observed that there were 18.3 units in the control option, 18.2 units or 99.4% in options 2-3, 19.1 or 104.3% in option 4, and 18.8 or 102.7% in option 5.

When the leaf weight was analyzed in the varieties, it was 1164.6 g in the control option, and the highest indicator was 1254.9 g or 107.7% in the option planted in the 60x30 cm scheme compared to the control.

It was found that the Tashkentskaya 10 variety had a higher leaf weight (1985.6-2317.0 g) in all options compared to the Navruz variety.

Among the selected hybrids, Magnus F1 in the control option had an average of 7.8 leaves when the number of leaves was determined after emergence. The maximum number of leaves was 8.1 when option 4 was planted in a 60x30 cm scheme. The highest indicator of the number of leaves at the time of cabbage harvest was 13.2 pieces when planted in the 60x30 cm scheme, and the lowest indicator was observed in the 70x40 cm scheme. When counting the number of leaves in Fresco F1 hybrid, it was found that it was 1.1 more than Magnus F1 hybrid in all options. The option with the highest number of leaves when the cabbage starts to roll was when it was planted in a 60x30 cm scheme. The rest of the options showed a performance closer to the control option.

During the harvesting period, the number of leaves in all options among the varieties was the highest in the Tashkentskaya 10 variety (18.2-19.1 pieces). Among the hybrids, Fresco F1 has 1.3-1.4 more leaves than Magnus F1.

When studying the leaf weight of the Magnus F1 hybrid, the highest value was 1611.6 g or 100.3% when planted in a 60x30 cm scheme, while the lowest value was 1576.3 or 94.5%

when planted in a 70x50 cm scheme. In the Fresco F1 hybrid, these parameters increased according to the options, and it was found that the leaf weight was 18.2% higher in the option planted in the 60x30 cm scheme compared to the control.

In conclusion, it was proved that the number of leaves and the weight of the leaves were high when the varieties and hybrids of white cabbage were planted in the open field in a 60x30 cm scheme in weakly saline areas.

We know that cabbage consists of leaves and leaf band. During the observations, the length of the leaf band of white cabbage varieties and hybrids in different planting schemes was determined (see Table 2).

When the 40-day-old seedlings planted in the Navruz variety were measured, the bar band was 4.1 cm in the control option, and among the options, it was found to be 114.6% higher when planted in a 60x30 cm scheme, and 4.8-7.3% higher than the control in the other options. The 4th option (60x30 cm) was the same as the control by 2.5 cm when the cabbage began to roll, and the other options were 4.0-8.0% lower than the control. In Tashkentskaya 10 variety, the length of the leaf band in the first phase was 5.1 cm in the control option, 5.2 cm in the 4th option, and 96.0-99.0% lower than the control option in the remaining options. It was found that the leaf band decreased by 2.3 cm compared to the first phase in the option planted in the 70x30 cm scheme when the cabbage began to harvest. When analyzed by options, the highest result was 3.0 cm when planted in a 60x30 cm scheme. Due to the formation of cabbage at the end of the growth period, the leaf band was shorter compared to the previous two phases. In the Magnus F1 hybrid, during the period of seedling capture, the control and option 3 were 3.2 cm, options 2-5 were 3.1 cm, and the highest value was 3.3 cm in option 4. It was found that these indicators decreased by 1.1-1.3 cm. At the end of the growth period, there was almost no significant difference between the options, but the 4th option recorded a 9% higher result compared to the control.

Table 2

The effect of the planting scheme on the length of the leaf band during the growing season of white cabbage, 2022-2023

Planting scheme, cm	During the period of planting		When the cabbage starts picking		At the end of the growth period	
	cm	relative to the control, %	cm	relative to the control, %	cm	relative to the control, %
Navruz						
70x30 con	4,1	100,0	2,5	100,0	1,3	100,0
70x40	4,3	104,8	2,4	96,0	1,2	92,3
70x50	4,5	109,7	2,3	92,0	1,1	84,6
60x30	4,7	114,6	2,5	100,0	1,4	107,6
60x40	4,4	107,3	2,4	96,0	1,2	92,3
Tashkentskaya 10						
70x30 con	5,1	100,0	2,8	100,0	2,8	100,0
70x40	5,0	98,0	2,9	103,5	2,6	92,8
70x50	4,9	96,0	2,7	96,4	2,5	89,2
60x30	5,2	101,9	3,0	107,1	2,9	103,5

60x40	5,0	99,0	2,9	103,5	2,7	96,4
Magnus F_1						
70x30 con	3,2	100,0	2,1	100,0	1,1	100,0
70x40	3,1	96,8	2,0	95,2	1,1	100,0
70x50	3,2	100,0	1,9	90,4	1,0	90,0
60x30	3,3	103,1	2,1	100,0	1,2	109,0
60x40	3,1	96,8	2,0	95,2	1,1	100,0
Fresco F_1						
70x30 con	3,2	100,0	4,4	100,0	13,2	100,0
70x40	3,1	96,8	4,2	95,4	13,9	105,3
70x50	3,3	103,1	4,5	102,2	12,8	96,9
60x30	3,4	106,2	4,7	106,8	14,3	108,3
60x40	3,1	96,8	4,3	97,7	14,0	106,0

In the Fresco F1 hybrid, compared to the Magnus F1 hybrid, the result of the leaf band control option was 1.1-1.4 cm higher. This situation was also observed in the remaining options. Among the options, a 6.2-6.8% higher result compared to the control was recorded in the option planted in the 60x30 cm scheme in all phases.

Conclusion

In conclusion, it was proved that the leaf band length of white cabbage varieties and hybrids was the highest during the seedling period, relatively low when the cabbage began to be harvested, and at the lowest level at the end of the growing period.

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