THE INFLUENCE OF DIFFERENT IRRIGATION REGIMES, FERTILIZER RATES AND STEM THICKNESS ON THE GROWTH AND DEVELOPMENT OF COTTON

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Abstract. *Complete information is provided on the influence of irrigation regime, mineral fertilizer rates and stem thickness on the growth and development of cotton variety C-278.*

Keywords: *cotton, soil, agricultural technology, fertilizer, irrigation, regime, mineral fertilizers, nitrogen, phosphorus, potassium, rate, number of plants, productivity.*

Introduction. It is important to develop the cotton and grain sectors of agricultural production, the creation and development of a modern, scientifically based farming system and its implementation in the conditions of all natural soil and climatic regions (provinces). Selection and breeding of coordinated, fertile, high-quality fibrous, early-ripening, promising medium- and fine-fiber cotton, as well as grain varieties with high all indicators, suitable for certain natural soil and climatic conditions, is necessary for the further development of seed production.

Field experiments were carried out in the fields of the Samarkand experimental station of the Research Institute of Breeding, Sowing and Technology of Cotton Cultivation of Uzbekistan. The soil is grassy, non-saline, the groundwater level is 7-8 m, the mechanical composition is sand, the previous crop is grain and cotton. Agrophysical and agrochemical properties of the soil are analyzed in the field annually before the experiment and during the cotton growing season. Climatic conditions are given according to data from the Dakhbet agrometeorological station. Field experiments are carried out on old irrigated, cultivated fields. The following table shows the design of the experiment.

Experimental structure

Options	Irrigation mode depending on the moisture capacity of the field	Number of fertilizers			Number of plants, thousand	Planting scheme
		N	P	K		
1	65-65-60	200	140	100	90-100	90x9x1
2					110-120	90x11x1
3		250	200	125	90-100	90x9x1
4					110-120	90x11x1
5	70-70-60	200	140	100	90-100	90x9x1
6					110-120	90x11x1
7		250	200	125	90-100	90x9x1
8					110-120	90x11x1

Activities arising from the unique features of the cotton growing system can be met only by the needs of the domestic and foreign markets if all regions, districts, different types of farms and farmers are carried out on time, in moderation and at a good level. It is believed that conditions and opportunities have been created for the cultivation of fiber crops that can satisfy the consumer. For this reason, determining the optimal watering, feeding order and number of plants for new and zoned varieties of cotton is important in the general agrotechnical complex, since one or another variety of cotton is exposed to the external environment, they differ from each other to varying degrees. to a certain extent according to their requirements.

In particular, important issues are the procedure for irrigating new varieties of cotton grown in different soil and climatic conditions of our republic, maintaining the optimal number of bushes depending on fertilizer rates and determining their effectiveness.

Based on the above, the method of irrigating the new cotton variety S-278, created by scientists of the Samarkand Scientific Experimental Station in the conditions of meadow-gray soils of the Samarkand region, is optimal depending on the amount of fertilizer. planned to conduct scientific experiments to determine the effectiveness of numbers.

The effectiveness of mineral fertilizers in irrigated agriculture directly depends on soil fertility, as well as the number of plants planted and the availability of moisture during operation. Considering that plants absorb nutrients only when they are dissolved in water, it is necessary to know or clarify the humidity of the field, that is, the norms for watering the plants.

The results of phenological observations carried out on the basis of a work program to study the influence of the above factors on the growth and development of cotton under the weather conditions of this year were as follows. (Table 1). In our observations carried out on June 1, the number of true leaves with a diameter of 10-13 cm was 5-6 pieces per plant height; there was no sharp difference between the options. In our phenological observations carried out on July 1, the pre-irrigation soil moisture of the whole plant was 46-53 cm with a 65-65-60 percent irrigation regime compared to the NDNS, 6-7 heads and 7 with a pre-irrigation regime. - irrigation soil moisture 9 units, plant height 54-56 cm, number of branches 7-9, number of branches 9-11. The unit is organized. When comparing the average indicators of the options in the studied irrigation regimes, the pre-irrigation moisture content of cotton is 65-65-60 percent compared to the BSN, in the irrigation mode 70-70-60 percent compared to the options in the irrigation mode. It was noted that these indicators were higher by 4.1 cm in plant height, by 1.0 and 0.8 in the number of branches.

In our biometric observations carried out on August 1, in comparison with the NDNS experiment, in water regime options 65-65-60, the plant height was 79-85 cm, the yield of branches was 11-12 pcs., the number of pods. there were 8-10 pieces. observed. At 70-70-60 percent irrigation regime of the experimental field, the average plant height was 84-86 cm, the yield of branches was 11-12 pcs., the number of pods was 10-11 pcs. It can be seen that the highest rates

Watering 70-70-60 percent, N-125, P-175, K-125 in the amount of fertilizer applied in the amount of 90-110 thousand plants/ha of experiment compared to NDNS Branch length 86 cm, 12 pods, 11 pods, 110-120 thousand plants per hectare, plant height 83 cm, 12 pods, 10 pods ready. The results of phenological observations carried out on September 1 were as follows: with a 65-65-60 percent irrigation regime, the number of pods was 12-15, and the number of open pods was 3-4, compared with the NDNS, in an irrigation regime of 70-70- 60 percent, the number of capsules

according to the options is 15-16, and the number of open capsules is 5-6, which corresponds to the observation indicators on August 1. the indicator was observed in options 5-8.

The influence of mineral fertilizers and irrigation regime on the growth, development and formation of cotton yield elements.

Table 1

Options	Irrigation regime according to NDNS, %	Amount of fertilizers, kg/ha			Number of plants, thousand/ha	June 1		July 1			August 1				September 1 1	
		N	P₂O₅	K₂O		Plant height, cm	Number of leaves, pcs	Plant height, cm	Yield branch, pcs	Yield branch, pcs	Plant height, cm	Yield branch \ pcs	Number of bags, pcs \	Number of Hole, pcs	Number of bags, pcs	Opening, pcs
1	65-65-60	200	140	100	90-100	11	6	53	7	8	84	12	9	10	14	4
2					110-120	12	5	46	6	7	82	12	8	9	12	4
3		250	175	125	90-100	12	6	53	7	9	85	12	9	11	13	4
4					110-120	10	5	49	7	8	79	11	10	9	15	3
5	70-70-60	200	140	100	90-100	12	6	55	7	10	84	12	11	10	16	6
6					110-120	13	6	54	7	9	86	11	11	11	15	5
7		250	175	125	90-100	13	6	56	9	11	86	12	11	10	16	6
8					110-120	12	6	55	8	10	83	12	10	11	15	5

According to the program, when determining the number of stems at the beginning of the growing season and at the end of the growing season, data were obtained for the options.

The influence of irrigation and fertilizer rates on stem thickness (thousands/ha)

Table 2

Options	Irrigation regime compared to NPSN, %	Amount of fertilizers, kg/ha			Theoretical number of bushes	Real number of bushes		Difference
		N	P	K		At the beginning of vegetation	At the end of vegetation	
1	65-65-60	200	140	100	90-100	92	89	3
2					110-120	108	103	5
3		250	175	125	90-100	90	87	3
4					110-120	94	92	2
5	70-70-60	200	140	100	90-100	98	94	4
6					110-120	106	102	4
7		250	175	125	90-100	99	96	3
8					110-120	109	105	4

According to the work program, in options 1, 3, 5, 7, where the number of 90-100 thousand bushes should be maintained, the number of bushes left in early spring is 90-99 thousand/ha. During the growing season, this figure is 87-96 thousand bushes. Besides that, in the options where

the number of bushes of 110-120 thousand/ha specified in the program should be maintained, it is determined that at the beginning of the growing season 94-109 thousand/ha are maintained, and at the end of the growing season - 94-109 thousand/ha. during the growing season it was established that 92-105 thousand bushes were preserved (Table 2).

Conclusion:

1. The influence of agrotechnical factors used in the experiment on the ripening phase of cotton this year is in the order of 1-2-1, while the opening of bolls on August 10 is 52-64 percent, 1-3 - it is noted that in the irrigated regime of the 1st order it was 56-64 percent.

2. The amount of fertilizers applied to the water regime 65-65-60 percent relative to the NDS before irrigation increases the yield by an average of 0.2-3.1.
These indicators amounted to 1.9-2.0 c with a 70-70-60 percent water regime compared to the NDNS, which provided an increase in s/h.

3. In the given options, the amount of fertilizers is N-200, P2O5-140, K2O-100 kg/ha, the humidity before watering cotton is 70-70 with an irrigation regime of 65-65-60 percent compared to the NDNS - with an increase in cotton yield of up to 60%. up to 5.6-8.2 c, with an increase in the amount of fertilizers N-250, P2O5-175, K2O-125 kg/h, this figure is 5.6-9.8/gas was observed.

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