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INFLUENCE OF AGROTECHNOLOGICAL FACTORS ON COTTON YIELD

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Abstract
In the field experiment, three different thicknesses of cotton bushes (80; 100 and 120 thousand per hectare, as well as 7.2; 9.0 and 10.8 plants per 1 pogonometer, respectively), two different irrigations relative to the limited field moisture capacity of the soil (ChDNS) regime (70-70-60 and 75-75-60%, as well as the irrigation regime 2-3-0 and 2-4-0, respectively) and the ratio of the two norms of fertilizer (NPK) (1: 0.7: 0, 5 and 1: 1: 0.5) were studied. The annual norm of fertilizers was: N200 P140 and K100 and N200 R200 and K100 kg.
It was taken into account that the yield of cotton grown under conditions where the irrigation regime was 70-70-60% relative to the soil ChDNS (limited field moisture capacity) was higher in the years of experiments than the yield in the 75-75-60% regime irrigated variants. In the 70-70-60% irrigation regime, the average yield was 35.7-40.9 ts / ha, depending on the thickness of the bush and the ratio of fertilizers, while in the 75-75-60% irrigation regime the yield was 33.2-36.4 on average. ts / ha.
The micronair index of fiber in cotton harvested from experimental variants was 4.3-4.5, and the micronair index of cotton fiber harvested from 70-70-60% of irrigated variants was slightly higher than the 75-75-60% irrigation regime.

Keywords: Fertilization ratio, watering regime, bush thickness, fertility, the quality, limited field moisture capacity, wet capacity, gross, general, mobile, nitrogen, phosphorus, potassium, humus, economic efficiency, profitability.

Introduction

It is known that each variety of crops is planted in a certain area, and only when the appropriate factors are provided, it is possible to take full advantage of its potential, and abundant and high-quality yields have been proven in experiments. Water shortages are growing from year to year, the lack of mineral fertilizers and non-compliance with the requirements for their application due to plant demand affects the complexity of environmental conditions in our country. With this in mind, one of the most pressing issues today is the efficient use of available water resources, reducing water wastage, ie determining the optimal seedling thickness for crop varieties, developing and implementing water and nutrition regimes.

Taking this into account, as a result of studying the irrigation and nutrition regimes of the Zarafshan variety of cotton, which is widely cultivated in a number of regions of the country, including Samarkand region, it is possible to make full use of the potential of this variety. For this purpose, in order to study different irrigation regimes in relation to the norms of mineral fertilizers, field experiments were conducted in the conditions of meadow-gray soils of PSUEAITI (Scientific Research Institute of Cotton Breeding, Seed Production and Agrotechnology) Samarkand ITS (Scientific Experimental Station).

Field experiments were conducted in 4 repetitions, the variants were placed in two tiers, the total area of each delyanka was 360 sq.m., taking into account 180 sq.m. All agro-technical processes, biometric measurements and phenological observations in the experimental field were carried out on the basis of the recommendations of UzPITI (Uzbek Cotton Research Institute).

The soil of the experimental field is meadow-gray, the average sand content depending on the mechanical composition, the groundwater level is 3-4 meters deep. It is an old cultivated land, a past crop of cotton.

Prior to the experiment, in the driving layer (0-30 cm) mobile nitrogen-15.3 mg-kg, phosphorus-22.4 mg-kg, humus-1.13 percent, in the 30-50 cm layer of soil, respectively 9.2-13 , 4 mg-kg, humus-0.86 percent and the amount of nutrients in the general form was nitrogen-0.125 percent, phosphorus-0.173 percent, in a layer of 30-50 cm, respectively 0.078-0.155 percent.

The volumetric mass of soils in the experimental field is 1.27 g.cubic cm in the 0-70 cm layer, 21.0% in the limited field moisture capacity, and in the 0-100 cm layer it is 1.30 g.cubic cm, 22 , Was found to be 0 percent.

In the experimental field, cotton was irrigated in two irrigation regimes (70-70-60 and 75-75-60 percent) and treated with mineral fertilizers (N 200-200, P 140-200 and K 100-100 kg) in two different proportions.

Irrigation of cotton was carried out on the basis of soil moisture 0-70 cm before flowering and ripening, and 0-100 cm during flowering and harvesting. At the same time, pre-irrigation soil moisture was 14.6-15.8% in the 70-70-60% water regime, which was 69.5-71.8% of the soil's limited field moisture capacity. When the irrigation regime is 75-75-60%, the soil moisture is 15.7 to 16.8%, which is around 74.5-76.4% on the limited field moisture capacity of the soil.

In general, the interval between irrigations of cotton in the irrigation regime of 70-70-60% of the experiment was 18-22 days, and in the irrigation regime of 75-75-60% 15-17 days. At the same time, the maximum amount of water consumed per 1 hectare in each irrigation was observed in the irrigation regime of 7020-70% of 1220 m3, while the seasonal amount of water (net), on the contrary, in the 75-75-60% irrigation regime, the water consumption was slightly higher. was found to be high.

In order to maintain the irrigation regime of 70-70-60% of the experiment, the cotton was irrigated 2-3-0 during the growing season, using a seasonal water norm of 5180 cubic meters per hectare. In order to ensure an irrigation regime of 75-75-60 percent, 5360 cubic meters of water was poured per hectare per season and irrigated in 2-4-0 order.

In the context of growing shortage of irrigation water from year to year, it is necessary to take measures to use it as sparingly as possible. First of all, it is necessary to pay attention

to irrigation standards. They should not exceed the amount of insufficient moisture in the diffused layer of the root system of the soil during a certain period of cotton development, because excess water is wasted — cotton can not use it.

This means that in order to increase the yield of cotton, it is necessary to irrigate the cotton regularly, not to over-irrigate it or to over-irrigate it.

On August 1, the number of pods per plant decreases with increasing seedling thickness.

In the 70-70-60 percent of the irrigation regime options, the average was 5.0-6.4 bushes per plant, while in the 75-75-60 percent irrigation regime, the average was 4.6-5.9. up to one piece was taken into account.

Mutual variation of the fertilizer ratio, i.e., a 1: 0.7 to 1: 1 increase in the phosphorus element relative to the nitrogen fertilizer, had a positive effect on the increase in the number of pods, albeit slightly, in both studied irrigation regimes.

Taking into account the opening of the cocoons collected on September 1, it was found that in the 70-70-60% of the experiment, the irrigated variant had an average of 80,000 seedlings per hectare, with more cocoons (1.7-1.8) than the other options. however, a decrease in the number of open buds was observed with an increase in the number of seedlings.

It should be noted that cotton was found to have a positive role in opening the cocoons of cotton grown under a 1: 1 ratio compared to feeding nitrogen fertilizer in a 1: 0.7 ratio to phosphorus fertilizer.

It was found that the increase in irrigation regime delayed the ripening of cotton with increasing seedling thickness, but in contrast to the equalization of the amount of phosphorus fertilizer to nitrogen fertilizer (1: 1 ratio) slightly accelerated the ripening phases of cotton.

Table -1 Influence of irrigation regime, seedling thickness and fertilizer ratio on cotton growth, development and yield

Options	Irrigation mode,%	Planned seedling thickness	The ratio of NRK	Productivity.
1	70-70-60	80	1:0,7:0,5	36,4
2		100		38,8
3		120		35,7
4		80	1:1:0,5	38,2
5		100		40,9
6		120		37,3
7	75-75-60	80	1:0,7:0,5	34,7
8		100		35,8
9		120		33,2
10		80	1:1:0,5	35,2
11		100		36,4
12		120		34,6

A (water). $EKF_{0,5}$=1.59 s/ga, B(NPK). $EKF_{0,5}$=1.59 s/ga, C(plant thickness). $EKF_{0,5}$=1.3 s/ga

In the 70-70-60 percent irrigation regime of the experiment, cotton yields averaged 35.7 to 40.9 quintals per hectare, depending on seedling thickness and fertilizer ratio. When 6,000 seeds were left, the fertilizer ratio (NPK) was taken from the variant with a ratio of 1: 1: 0.5, and the quality indicators of the crop were observed in the same variant. In the same irrigation regime (70-70-60%) when the thickness of seedlings is increased to 117.5 thousand pieces per hectare, and in the variant with a ratio of NRK 1: 1: 0.5, the yield is 3.6 quintals and 79.2 thousand seedlings per hectare. a decrease in yield of 2.7 quintals was taken into account.

It was taken into account that the yield increased from 2.5 to 5.1 quintals per hectare, depending on the thickness of seedlings and fertilizer ratios in the 75-75-60% irrigation regime, compared to 70-70-60% irrigation of cotton.

Thus, based on the results of the experiment, it can be concluded that the interaction of agro-technological elements is a key factor in improving productivity and crop quality.

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