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EFFECT OF BOLL THICKNESS AND THRESHING ON THE YIELD OF THE TERMIZ-202 VARIETY OF THIN FIBER COTTON

Annotation: According to the data obtained from the conducted field experiments, it was found out that the control of the growth point and the thickness of the seedling have a great influence on the cotton yield and its quantity.

On average, 75% of the cotton crop was harvested in the first harvest in the experimental field. From the lowest productivity control option, 140,000 bushels per hectare were left, and 28.5 s/ha of cotton was harvested in the option that was cut on July 20. The highest productivity in the experimental field was 140,000 bushels per hectare, and 34.1 s/ha of cotton was harvested from the variant that was weeded on August 10.

Introduction

The productivity of cotton is directly related to the quality of many agro-technological measures in time.

Cotton cultivation technology should be suitable for soil and climate conditions for each agricultural region. In particular, when planting each type of cotton, it is necessary to create and apply a technology suitable for specific soil and climate conditions, and to constantly improve it. One of such activities is controlling cotton stem thickness and cotton growth process, which has great practical importance and is considered relevant to study based on its variety characteristics.

The Termiz-202 variety of cotton is grown in the main areas of Surkhandarya region and in the southern regions of our Republic. The study of the effect of some unexplored technologies on the thickness of the stalk and the weeding of this variety on cotton yield, fiber and seed quality in the conditions of medium salinity grazing barren soils under the anthropogenic influence of this variety is important for the wide use of the potential opportunities of this variety. For this purpose, the study of the effect of different bush thicknesses and harvesting periods on cotton yield, fiber and seed quality in extreme climatic conditions is the demand of the time.

Materials and methods

Phenological observations, biometric measurements, analyzes and calculations in all conducted laboratory, field and production experiments were carried out on the basis of the methods adopted at the Scientific-Research Institute of Cotton Selection and Seed Growing Agrotechnologies.

The total amount of nitrogen and phosphorus of the experimental field was determined by the method of K.S. Ginzburg, Ye.I. Sheglova and S.V. Wilfius, the amount of mobile nitrogen was determined by the method of Granwald-Lyaju, phosphorus by the method of B.P. Machigin, and humus by the method of I.V. Tyurin.

The obtained results were analyzed by the method of B.A. Dospekhov. Analyzes of fiber and seed quality were performed in the laboratory of the Faculty of Agrobiolgy of Termiz State University of Engineering and Agrotechnology.

The research was conducted in the fields of the farm "Nurmuhammad Makhsum" located in At-Termizi MFY, Termiz district, Surkhandarya region, during 2022-2023.

The soils on which the scientific research work was carried out belong to the barren soils that have been irrigated for a long time under the influence of anthropogenic influence and are becoming grassy with moderate salinity. The agrochemical characteristics of the experimental field are presented in Table 1.

Table 1

Initial agrochemical description of the soil of the experimental field, 2022-2023.

Soil layers, cm	Common forms, %			Moving forms, mg/kg		
	humus	nitrogen	phosphorus	N-NO ₃	P ₂ O ₅	K ₂ O
2022						
0-30	0,811	0,082	0,137	18,7	27,6	180
30-50	0,679	0,061	0,114	12,2	13,1	150
2023						
0-30	0,808	0,088	0,124	17,2	25,7	182
30-50	0,623	0,071	0,102	11,3	12,5	149

The studied options of the experiment were 4 repetitions, and the delyankas were systematically placed in two tiers. The area of each delyanka is 360 sq.m. is (50 m x 7.2 m), and the fourth row in the middle constitutes the area to be taken into account. 2 rows (defensive rows) from both sides are not counted.

Seeds of the Termiz-202 variety of cotton were planted in wide rows (90 cm) in the experimental field.

In the experiment, two different seedling thicknesses (140 and 160,000/ha) and three periods of chiling (20.07, 1.08 and 10.08) were studied. (See Table 2 for experimental setup).

Planned mineral fertilizers (N200, P140 and K100) were distributed as needed: 70 percent of the annual norm of phosphorus fertilizers was applied before plowing, and the remaining 30 percent during the flowering stage of cotton; 50 percent of the annual rate of potash fertilizers is applied before the autumn plowing, and the remaining 50 percent during the period of cotton harvesting; 20 kg of the annual rate of nitrogen fertilizers was given at the time of planting the seeds, and the remaining part was given in three periods, i.e., in the 3-4 leaf phase of the cobs, in the stages of budding and flowering (Table 3).

Table 2

Experiment structure

Experience options	The specified number of plants is ha/thousands	The duration of the chirp
1	140 (control)	20.07
2	140	1.08

3	160	10.08
4		1.08
5		10.08

Table 3**Distribution of mineral fertilizers according to their application periods (in kg/ha)**

Fertilizer type and rate Terms of use	N	P ₂ O ₅	K ₂ O
Annual rate of fertilizers	200	140	100
Before plowing	-	100	50
Along with planting	20	-	-
2-4 in the fruiting phase	40	-	-
In the grooming phase	70	-	50
In the flowering phase	70	40	-

Results and Discussion

According to the data obtained from the conducted field experiments, it was found out that the control of the growth point and the thickness of the seedling have a great influence on the cotton yield and its quantity.

It can be seen from the figures given in Tables 4 and 5 of the experiment that a significant decrease in cotton yield was taken into account with the increase in stem thickness per hectare.

On average, 75% of the cotton crop was harvested in the first harvest in the experimental field. From the lowest productivity control option, 140,000 bushels per hectare were left, and 28.5 s/ha of cotton was harvested in the option that was cut on July 20. The highest productivity in the experimental field was 140,000 bushels per hectare, and 34.1 s/ha of cotton was harvested from the variant that was weeded on August 10.

Table 4**The thickness of the bush and the length of the cotton harvest impact on productivity, on the basis of ha/s**

Options	Periods of cutting off the growing point	Planned strength thickness, ha/thousand pieces	Seedling thickness before harvest, ha/thousand	Productivity according to crops per s/ha			Productivity, s/ha
				15.09	27.09	13.10	
1	20-july	140	139,8	20,1	6,4	2,0	28,5
2	1-august	140	138,7	24,1	5,5	2,0	31,6
3	10-august	140	138,2	24,7	5,5	2,9	34,1
4	1-august	160	154,4	20,8	6,7	1,6	29,1
5	10-august	160	155,7	23,5	6,6	2,2	32,3

Table 5

Effect of stem thickness and tillering on cotton yield according to repetitions, ha/s. at the expense of

Options	Retail deadlines	Planned strength thickness, ha/thousand pieces	The weight of one bag of cotton gr	Productivity according to repetitions s/ha				Productivity, s/ha
					I	II	III	
1	20 july	140	4,6	29,1	28,3	27,5	28,7	28,5
2	1 august	140	4,4	30,7	31,3	32,1	32,5	31,6
3	10 august	140	4,5	32,5	35,4	34,7	34,0	34,1
4	1 august	160	3,6	27,9	29,8	28,7	30,0	29,1
5	10 august	160	3,7	31,8	30,8	33,7	32,9	32,3

Sd=1,61 s/ha

TSD_{0,5}=3,4 %

When the cotton weight of one bag was analyzed, it was observed that the weight of cotton in the bag decreased with the increase of bush thickness from 140,000 to 160,000 per hectare. When analyzing the weight of cotton obtained from one boll, 4.4-4.6 g of cotton was extracted in the option of leaving 140 thousand bushels per hectare, and 3.6-3.7 g of cotton in the option of leaving 160 thousand bushels per hectare (Table 5).

Taking into account that the Termiz-202 cotton variety belongs to the zero type, it was found from the experiment that if the crop elements are developed in 16-20 joints of the cotton bush, i.e., when the crop elements are developed, the yield and quality of the crop will be higher (Table 5).

In the development of cotton farming, it is important to increase the yield of cotton per hectare and achieve high economic efficiency with low costs.

The industrial varieties of the cotton handed over according to the harvests were determined, and the total amount of money received from the sale of cotton was calculated accordingly.

When determining the total costs, the costs per hectare of the farm, the amount of seeds spent according to the options were determined, and the costs of picking the harvested crop were added and calculated.

In order to calculate the net profit of the options studied in the experiment, it was determined by subtracting (deducting) the amount of total expenses from the total amount of funds received from the sale of crops grown in each option.

According to the data of Table 6, the highest amount of net profit (4,366,794 soums) according to the experiment was obtained from option 3, i.e., from the cottons that were cared for on August 10 under conditions of retailing, with a thickness of 140,000 cottons per hectare.

Conclusion

In conclusion, it can be said that when the cotton weight of one bag was analyzed, the weight of cotton in the bag decreased with the increase of bush thickness from 140,000 to 160,000 per hectare. When analyzing the weight of cotton obtained from one boll, it was 4.4-4.6 g in the option with 140 thousand bushels per hectare, and 3.6-3.7 g in the option with 160 thousand bushels per hectare.

If we take into account that the Termiz-202 cotton variety belongs to the zero type, it was found out from the experiment that if weeding is carried out when the crop elements, i.e. complete bolls, are developed in the 16-20 joints of the cotton bush, the yield and quality of the crop will be higher.

In the experimental field, on average, 75% of the cotton crop was harvested in the first harvest. From the lowest productivity control option, 140,000 bushels per hectare were left, and 28.5 tons/ha of

cotton were harvested in the option that was cut on July 20. In the experimental field, the highest yield was 140,000 bushels per hectare, and 34.1 ts/ha of cotton was harvested from the variant that was weeded on August 10. The decrease in the thickness of the above sprouts (to 140,000 pieces) and early cutting periods led to a decrease in productivity to 5.6 centners.

Table 6

Use different bush thicknesses and periods of weeding in cotton care economic efficiency

Options	Retail deadlines	Planned strength thickness, ha/thousand pieces	Cotton productivity is s/ha	Money received from the sale of cotton, ha/soum	Total expenses, ha/soum	Product cost of 1 centner, soums	Condition al net profit, ha/soum	Rate of return, %
1 (control)	140	20 july	28,5	14257000	11000000	426356	3257000	29,6
2	140	1 august	31,6	15523200	12006491	379952	3516709	29,9
3	140	10 august	34,1	17528200	13161403	385964	4366794	33,1
4	160	1 august	29,1	15518200	12002631	412461	3515569	29,3
5	160	10 august	32,3	17604600	13659999	422910	3944601	28,8

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