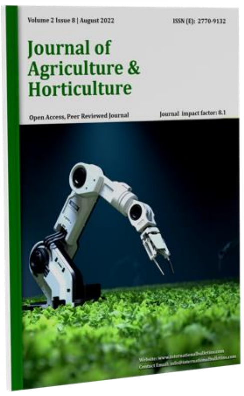

EVALUATION OF NEW VARIETIES OF FINE FIBER COTTON UNDER EXTREME CLIMATIC CONDITIONS.

Donabaev A.A.
Ph.D in Agricultural Sciences, senior researcher. Scientific Research Institute of Thin Fiber Cotton
Abdurakhimov Nurali Normamatovich
Associate professor, Termiz State University of Engineering and Agrotechnology
Murodov A.M.
leading expert Seed Development Center under the Ministry of Agriculture,
nuraliabduraximov69@gmail.com
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Abstract. In this article, the growth, development, formation of crop elements, dynamics of flowering, their number, the opening of bolls, the total formed crop elements and shedding of thin-fiber cotton varieties in the harsh continental climate of the southern region of our republic were studied. Also, the efficiency of carrying out the applied agrotechnical measures in the correct and acceptable periods in high yield accumulation has been studied.
Keywords. Cotton, prospective, variety, fine fiber, plant, root, system, nutrient, height, vegetative, generative, yield elements, boll, flower, boll, shedding, temperature, garmsel, relative humidity, rate, productivity.

It is known that cotton is one of the technical crops that provide raw materials for textile and other industries. In order to make textile products exportable, it is necessary to pay serious attention to the maintenance of domestically grown cotton varieties, especially to increase fiber quality and productivity. For this, it is necessary to select varieties with high fiber quality, high productivity, quick ripening, disease and pest resistance, suitable for mechanical harvesting, and to expand their cultivated area. It should be noted that now the main areas are planted with cotton varieties created by our breeder scientists, whose fiber is popular in the world market, fast-growing, resistant to various diseases and unfavorable extreme conditions of nature. However, based on the biological characteristics of these cultivated cotton varieties, it is important to develop their agrotechnics suitable for different soil and climate conditions.

Therefore, it is important to introduce the system of agro-measures for the care of any new, promising and regionalized cotton varieties recommended for production in large areas, taking into account the soil-climatic conditions. The southern region of our republic differs from the central region in that the soil and climate conditions are sharply continental. This region is characterized by a rapidly changing climate in spring and hot summer months (45-47°C), hot and extremely dry air flow, wind blowing for 4-5 days, drying of the air and increasing humidity deficit (up to 90 mbar), dust and pollen. In "anomalous" conditions such as the seasonal blowing of the "Afghan" wind, requires the use of the potential of thin fiber cotton, which ensures high yields.

Table 1 shows the growth, development and harvest of new varieties of thin-fiber cotton, which are being cultivated in the southern region of our republic and are being widely tested.

According to the results of the conducted observations and researches, it can be seen that in the first and second ten days of May and June, cotton develops rapidly, and on average, 7.8-20.4 pieces of crop elements, including 2.7-3.2 pieces of bolls, are formed in one bush of

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cotton. From the last ten days of June, the weather conditions changed, very hot days began, the weather was very dry and very hot during the day, and warm winds with a speed of 5-10 m/s were blowing repeatedly. During the flowering-bud ripening phase of cotton, due to the dry, hot climate in the region, cracks appeared in the seams of the bolls, and in the morning green, stagnant bolls were shed. In the following days (29-30.06) the shedding of flowers and branches increased. Since the beginning of July, the daytime temperature has risen to 46.5°C, and the activity of strong winds has increased. (for 5 days, the windstorm repeated at a speed of 10-19 m/s) and caused serious damage to crops. Due to the observed extremely high temperature lasting 11 days (23.06-04.07), in most of the thin fiber cotton varieties, the bolls dried up in the plant body. In the 2nd and 3rd ten days of July, the temperature increased further (38.9-45.7°C), and the average daily temperature was 41.2-41.4°C. It was observed that the rate of development of cotton varieties is drastically reduced under the influence of high temperature and heat.

In July, under the influence of climate changes, 7.0-15.4 units (26-48%) of the bolls, flowers and small bolls dried up in cotton varieties, according to the phenological data conducted on September 1, 19.7-24.2 units as a result of the effect of the applied agrotechnical measures. it was found that the cysts were preserved. It was found that 13.0-17.1 bolls were added as a result of agrotechnical measures applied in July, when extremely high temperature was observed (Table 2). The opening of 50% of bolls was 97.1-103 days (on July 23-29) according to varieties. (Table 1)

In a short period of time, it was noted that the cotton varieties had a rapid development in June and July, a sufficient harvest (19.7-24.2 bolls), turning of bolls into bolls, ripening of bolls, and the beginning of opening of the first bolls. (Table 2)

Thin-fiber cotton varieties require high-quality soil plowing, planting, watering, feeding and other agrotechnical measures in appropriate terms and standards when planting and caring for dry and extremely hot climates, water scarcity conditions. In the proposed agrotechnics of cotton, due to the deep penetration of the root system of the plant into the soil, it was found that it is possible to obtain a high yield and high-quality fiber due to the effective use of moisture and nutrients in the lower layers of the soil and the proportionality in the formation of vegetative and generative organs.

Table 1.

Growth, development and yield of fine fiber cotton varieties.

Varieties and ridges	50% flowering	50% opening	01.06		01.07				01.08						01.09		
			height cm	fine grain	height cm	the number of the yield term	yield element grain	Including the bolls	height cm	the number of the yield term	The total yield element is a piece	including		Spill size, pc	Number of bolls, pcs	Including bolls	
												Spilled elements piece	%			piece	%
Control. Сурхон-14	57.3	98.0	33.2	4.7	57.4	11.7	20.4	3.1	83.7	16.5	30.8	13.4	44	8.5-15.8	20.7	9.0	43
SP-1607	54.4	103	34.0	6.0	56.6	12.4	17.8	2.8	78.9	14.9	26.9	7.0	26	6.9-9.3	24.2	9.8	40
Termiz-202	58.9	98.9	35.2	4.8	61.6	12.3	18.3	2.7	82.2	16.8	30.2	11.7	39	8.0-14.1	22.0	8.1	37
Termiz-208	56.4	98.1	35.5	5.0	62.3	12.9	19.8	2.8	84.0	17.4	31.8	15.4	48	8.7-16.5	22.2	7.5	34
Surxon-16	56.1	97.1	37.7	4.4	60.8	11.9	18.0	3.0	80.4	16.1	31.9	15.2	47	8.8-17.7	21.8	8.9	41
Surxon-18	58.2	99.0	36.6	5.3	61.9	12.8	19.9	2.9	79.1	16.9	32.2	15.2	47	8.0-16.4	21.4	8.8	41
Surxon-103	56.0	99.5	33.7	5.8	54.4	11.7	17.9	3.2	71.4	17.9	27.8	12.4	45	6.8-14.0	19.7	9.9	50
Surxon-106	57.4	100	37.7	4.4	60.8	11.9	18.2	3.0	89.4	16.5	27.9	10.0	36	8.0-11.7	21.3	7.5	35
ST-1651	59.1	100	37.0	4.3	62.3	12.7	17.8	2.7	83.0	17.3	25.0	11.7	47	7.7-12.7	21.2	7.0	33

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Table 2.

The effectiveness of agrotechnical measures in reducing the impact of high air temperature and harmsel on the preservation of crop elements.

Varieties and ridges	1.08							1.09					Yield, centners/ha			
	Total crop elements, pcs	including boll, pcs	Yield elements, pcs	spilled yield elements		added in July		Total yield elements, pcs	including boll, pcs	boll added in August, pcs	open boll		by years			
				p iece	%	x/e pcs	boll of rice				piece	%	2020	2021	2022	average
Control Surxon-14	30.8	17.4	3.0	10.4	34	13.4	14.3	32.3	20.7	3.3	9.0	43	36.0	26.8	41.1	34.6
SP-1607	27.2	19.9	2.3	5.0	22	8.3	17.1	28.2	24.2	4.3	9.8	40	37.2	37.2	41.8	37.3
Termiz-202	30.2	18.5	3.7	8.2	27	11.9	15.8	32.8	22.0	3.5	8.1	37	37.5	29.6	44.6	37.5
Termiz-208	31.8	16.5	4.0	11.4	36	15.4	13.7	31.9	22.2	5.7	7.5	34	37.7	31.7	46.5	38.6
Surxon-16	31.9	16.7	2.1	13.2	41	15.3	14.9	24.5	21.8	5.1	8.9	41	36.0	25.8	42.1	34.6
Surxon-18	32.2	17.0	2.5	12.8	40	15.3	14.1	28.9	21.4	4.4	8.8	41	34.0	34.0	39.0	35.7
Surxon-103	27.8	15.4	2.0	10.4	37	12.4	12.2	22.4	19.7	4.3	9.9	50	29.6	29.6	34.0	31.1
Surxon-106	27.9	17.9	3.4	7.0	25	10.4	14.9	27.4	21.3	3.4	7.5	35	35.1	33.2	39.0	36.0
ST-1651	27.1	15.7	3.0	8.7	32	11.7	13.0	29.7	21.2	5.5	7.0	33	33.4	31.2	39.9	34.8

Table 3.

Yield of new varieties of fine fiber cotton.

№	Varieties	I	II	III	Average
2020					
1	Control. Surxon-14	37,0	36,4	37,8	37,1
2	SP-1607	38,1	39,2	40,3	39,2
3	Termiz-202	39,9	39,0	40,4	39,8
4	Termiz-208	37,6	36,6	38,0	37,4
5	Surxon-16	36,6	37,7	38,7	37,7
6	Surxon-18	35,5	35,0	36,9	35,8
7	Surxon-103	32,0	31,2	33,1	32,1
8	Surxon-106	26,2	35,4	37,0	36,2
9	ST-1651	34,0	36,3	36,2	35,5
2021					
1	Control. Surxon-14	40,2	38,8	39,3	39,4
2	SP-1607	43,5	40,4	41,4	41,8
3	Termiz-202	40,7	39,1	39,7	39,8
4	Termiz-208	41,2	39,7	40,0	40,3
5	Surxon-16	40,6	39,0	39,7	39,8
6	Surxon-18	39,6	38,2	39,5	39,1
7	Surxon-103	34,1	33,3	34,6	34,2

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8	Surxon-106	40,4	39,3	39,7	39,8
9	ST-1651	38,8	37,2	38,3	38,1
2022					
1	Control. Surxon-14	36,3	34,7	36,9	36,0
2	SP-1607	37,4	36,2	37,9	37,2
3	Termiz-202	37,2	35,9	38,3	37,5
4	Termiz-208	38,0	36,6	38,5	37,7
5	Surxon-16	36,3	35,6	36,1	36,0
6	Surxon-18	33,5	33,7	34,8	34,0
7	Surxon-103	29,5	28,9	30,4	29,6
8	Surxon-106	34,1	35,2	36,0	35,1
9	ST-1651	33,2	33,0	34,0	33,4

32.1-39.8 centners/ha in 2020, 34.2-41.8 centners/ha in 2021, and 29.6-37.7 centners/ha in 2022 were harvested from cotton varieties planted in the experiment. In particular, the highest yield in 2020 was obtained from the Termiz-202 variety - 39.8 centners/ha, respectively, in 2021 - 41.8 centners/ha from the SP-1607 variety, and in 2022 - 37.7 centners/ha from the Termiz-208 variety. In all the years of the study, the lowest productivity indicator was observed in the Suxon-103 variety. (Table 3.)

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