RESEARCH CONDUCTED IN COTTON GROWING UNDER PRODUCTION CONDITIONS AND THEIR RESULTS

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Abstract: The paper presents data on the methods, standards, and seedling thicknesses of cotton seeds of the Andijan-37 variety in the conditions of light gray soils of the Andijan region under production conditions.

Key words: seed planting methods, scheme, seedling thickness, agrophysical properties of the soil, soil bulk density, porosity.

In the developed cotton-growing countries of the world, great attention is paid to the cultivation of cotton with high fiber quality, using advanced scientific achievements in the care of the cotton plant. In this regard, it is important to take into account the biological and morphological characteristics of cotton varieties and the soil and climatic conditions of the growing region when correctly determining the dates of sowing seeds and choosing planting systems. In order to achieve high cotton yields and high-quality fiber from cotton plants, scientific research aimed at developing optimal planting dates, planting systems and planting methods for each region based on the biological and morphological characteristics of each variety is one of the important and urgent issues of our time.

Production experiments were conducted in 2022 on 50.9 hectares of the “Bakht imkon rivoj chorvasi” farm in the Altynkul district of Andijan region, 76.4 hectares of the “Sohib omad barakasi” LLC cluster specializing in cotton growing in the Izboskan district, 22.4 hectares of the “Marhamat yulduzi” farm in the Marhamat district, 19.7 hectares of the “Bakht taronasi sabosi” farm, 23.2 hectares of the “Ismon bobo agro” farm, a total of 192.6 hectares in the region.

In the experiment conducted on the “Bakht imkon rivoj chorvasi” farm in the Altynkul district of Andijan region, the system consisted of 6 options, was carried out in 3 repetitions, 3 plots.

The areas occupied by the experimental variants were: in the planting schemes with a row width of 90 cm, the variant width was 60 m, the field length was 460 m, in the planting schemes with a row width of 76 cm, the variant width was 60.4 m, the field length was 460 m, the total area of the experiment was 50.9 ha.

Table 1

Experimental system in production conditions

Var	Options	Planting scheme
1	Sowing seeds in open ground	90x10-1
2	Planting seeds in single rows on plastic beds	90x10-1
3	Planting marigold seeds in open ground	90x(60x30)x12-1
4	Planting seeds on a film-covered bed of a cotton plant	90x(60x30)x12-1
5	Planting marigold seeds in open ground	(76x38)x9,7-1
6	Planting seeds on a film-covered bed of a cotton plant	(76x38)x9,7-1

In the experimental variants, ammonium nitrate (N–34%) was used as nitrogen fertilizer, superphosphate (P2O5–12–14%) as phosphorus fertilizer, and potassium chloride (K2O–50%) as potassium fertilizer. In the experiment, the variants were given 70% of the annual rate of phosphorus fertilizers and 100% of potassium fertilizers in the fall, under the plow, and the remaining 30% of phosphorus fertilizers were applied together with sowing.

Annual rates of nitrogen fertilizers were applied to the variants planted in open ground and under film mulch in the amount of 50% during the budding period and 50% during the flowering period.

When we analyzed the growth and development of cotton plants maintained according to planting systems and methods in the experimental

variants, it was observed that the effect of the applied agrotechnical measures was proven.

In particular, when the growth and development of cotton plants grown in the open field in variants 3 and 5, which were planted in the 90x(60x30)x12-1 and (76x38)x9.7-1 systems, was studied, the number of bolls that reached the state of 1.09 days compared to variant 1, where the seeds were planted in the open field in the 90x10-1 system, was 0.6-1.0 units, of which the number of opened bolls was 0.4-0.7 units, the number of opened bolls for the 1st harvest was 0.5-1.0 units, the weight of cotton with seeds in one boll was 0.4-0.8 g, the weight of opened bolls for the 2nd harvest was 0.1 g, the weight of cotton with seeds in one boll was 0.4-0.5 g, the average weight of cotton with seeds in one boll was showed that the weight of cotton with seeds was as low as 0.4-0.6 grams.

When analyzing the growth and development of plants in variants 4 and 6, where seeds were planted in pairs in the 90x(60x30)x12-1 and (76x38)x9.7-1 systems, compared to variant 2, where a film was placed on the bed and seeds were planted in single rows in the 90x10-1 system, the number of bolls increased by 0.6-0.9 units as of day 1.09, of which the number of opened bolls was 0.5-0.9 units, the number of opened bolls for the 1st harvest was 0.5-0.7 units, the weight of cotton with seeds in one boll was 0.3-0.6 g, the weight of opened bolls for the 2nd harvest was 0.1-0.2 g, the average weight of cotton with seeds in one boll was 0.4 g, and the average weight of cotton with seeds in one boll was 0.4-0.5 g less

However, when comparing the growth and development of cotton plants planted in open ground with the growth and development of cotton plants planted under film, compared to cotton plants grown in open ground, the plant height as of day 1.06 was from 2.8 cm to 3.1 cm, the number of cotyledons was from 2.8 to 2.9, the plant height as of day 1.07 was from 5.9 cm to 6.7 cm, the number of fruit branches was from 1.4 to 1.6, the number of combs was from

2.9 to 3.1, the number of flowers was from 3.7 to 4.4, the plant height as of day 1.08 was from 9.3 cm to 10.9, the number of fruit branches was from 2.5 to 2.8, the number of fruit elements was from 8.6 to 10.9. Up to 9.8 grains, the number of bolls increased from 2.1 to 2.4 grains, the number of bolls as of day 109 was from 2.0 to 2.1 grains, the number of opened bolls from 2.0 to 2.2 grains, the weight of opened cotton seeds in the 1st and 2nd harvests increased from 0.3 to 0.4 grams.

When determining the yield of cotton with seeds between the variants, it was observed that the data were obtained in accordance with the above laws. In variant 1, where seeds were planted in single rows in the open field and in the 90x10-1 system, the cotton yield was 29.9 t/ha on average, with a profitability rate of 17.5%. When studying the cotton yield in variants 3-5, where seeds were planted in double rows in the open field and in the 90x(60x30)x12-1 and (76x38)x9.7-1 systems, the average cotton yield was 32.2-33.6 t/ha, with a profitability rate of 19.3-22.5 percent, and an additional cotton yield of 2.3-3.7 t/ha was obtained compared to variant 1, where seeds were planted in the open field and in the 90x10-1 system, with a profitability rate of 17.5%. It was found to be 1.8-5.0 percent higher.

When analyzing the cotton yield of option 2, where the film is laid on the cotton, the seeds are planted in single rows, and the 90x10-1 system, it was observed that the average cotton yield was 35.8 t/ha, and the profitability rate was 23.1 percent. In options 4-6, where the film is laid on the cotton, the seeds are planted in double rows, and the 90x(60x30)x12-1 and (76x38)x9.7-1 systems, the average cotton yield was 38.0-40.4 t/ha, and the profitability index was 28.8-34.6 percent. Compared to option 2, where the film is laid on the cotton, the seeds are planted in single rows, and the 90x10-1 system, an additional 2.2-4.6 t/ha of cotton was obtained, and the profitability rate increased by 5.7-11.5 percent.

When analyzing cotton yield by planting method, it was found that cotton yield in systems planted under film was 5.8 t/ha to 6.8 t/ha, and the profitability index was 5.6 to 12.1 percent higher than in systems planted in open ground.

The results show that cotton yield in planting systems increased by 2.2 t/ha to 4.6 t/ha due to seedling thickness, and the profitability index increased by 1.8 to 11.5 percent, while cotton yield in open ground was 5.8 t/ha to 6.8 t/ha, and the profitability index was 5.6 to 12.1 percent higher than in systems planted under film.

In the light gray soils of Andijan region, to achieve high and high-quality cotton yields from cotton plants, it is recommended to harvest cotton in the fall, plant seeds in a (76x38)x9.7-1 system, and plant and care for the cotton with a film covering the cotton.

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