

# INFLUENCE OF FERTILIZER RATE AND IRRIGATION MODE ON SOWING SCHEMES AND STANDING DENSITY OF COTTON VARIETY PLANTS

*Janibekov Dilyorbek Abdumannobovich*

*Andijan Institute of Agriculture and Agrotechnology Teacher of "Agriculture and  
Forestry" Andijan, Uzbekistan*

*Kamolitdinov Asadbek*

*Student of Andijan Institute of Agriculture and Agrotechnology  
Andijan, Uzbekistan*

*Oxunjonov Mirkholiddin*

*Student of Andijan Institute of Agriculture and Agrotechnology  
Andijan, Uzbekistan*

**Annotation.** As a result of the research, the stand densities of cotton Andijan-35 82-84 thousand/ha, Andijan-36 115-120 thousand/ha and 95-100 thousand / ha of cotton Andijan-37 were developed and recommended, the cultivation of which is the main element of water and resource-saving technology by sowing scheme 60x13-1 for the regions of the Ferghana Valley.

**Key words:** cultivation, cotton, experiment, composition, accumulation, substantiated, transparent.

At present, the development of scientifically substantiated effective use of mineral fertilizers, water and resource-saving agricultural technologies is an urgent task of cultivating cotton, especially densely populated in the Andijan region of the Ferghana Valley of the Republic of Uzbekistan.

Thus, the new created cotton varieties Andijan-35, Andijan-36, Andijan-37, created in the soil and climatic conditions of the Ferghana Valley of the Republic of Uzbekistan, require a kind of cultivation care. Since, the development of agricultural technology of new varieties and their introduction into production is the main task of today.

From this direction, a number of scientific research works have been developed and recommended for the cultivation of an early high-quality cotton crop with top dressing from the annual rate of NPK-200-140-100 kg/ha at a plant density of 90-110 and 110-120 thousand/ha, as well as irrigation irrigation pattern 1-2-1, 1-3-1, 1-2-2.

So, a number of scientific research works have established and proved that when creating favorable conditions for ridge methods of tillage and sowing cotton under a film, it contributed to obtaining early shoots, healthy plants and optimal plant density, as well as high damage to raw cotton varieties of cotton in comparison conventional tillage by 28-30 cm [1, 2, 3,4].

In order to develop similar agricultural technologies for new cotton varieties Andijan-35, Andijan-36 and Andijan-37 of cultivation under different schemes of sowing, top dressing and plant density, as well as irrigation regime for soil moisture 70-70-60% of the FPV, we conducted field experiments 2012- 2014 at the Andijan Scientific and Experimental Station of the NISSA VKh.

So, the soil of the experimental plot is light gray soil of old irrigation, medium loamy mechanical composition, groundwater occurrence 4-5 m from the earth's surface. The content of humus in the arable layer is 0.9-1.1%. Options in triplicate, one tiered arrangement. The total area of the plot is 400 m<sup>2</sup>, accounting 200 m<sup>2</sup>. The research was carried out in two experiments.

In the first experiment, sowing cotton varieties Andijan-35, Andijan-36 according to the sowing scheme 90x13-1 and 90x13-1-2 and top dressing was carried out from the annual rate of N150P125K75 and N200P140K100 kg/ha as well as the irrigation regime for soil moisture 65-65-60% and 70-70-60% of PPV. The sowing of the cotton variety C-6524 according to the scheme 90x10-1 was taken as a control variant.

In the second experiment, the cotton variety Andijan-37 was cultivated with row-spacing mulching with a transparent film when sowing according to the technology of sowing cotton under film and black film after two cycles of

processing the row-spacing, which is the main element of water and resource-saving technology.

So, in 1-2 variants, cotton was sown using the usual method of sowing according to the 90x10-1 scheme without a film. But, on the 2nd option, mulching of the row spacing with a black film was carried out after the end of two cycles of processing the row spacing (until June 20), which, being the main element of water and resource-saving technology.

In the 3rd variant, mulching of the aisle with a transparent film was carried out during sowing according to the technology of sowing cotton under a film with a planting scheme of 60x15-1. And the processing of the row spacing in this variant was carried out along the furrows not covered with a film. Irrigation of cotton in the growing season on both variants was carried out with a mulched film. On the variants, two norms of fertilizer NPK-150-105-75 kg/ha are applied, the minimum of the annual norm and the annual norm of NPK-200-140-100 kg/a when irrigated according to the soil moisture of the irrigation regime 65-65-60% and 70-75 -60% of FPV.

The results of the study show that if, taking into account the theoretical plant density of 85 thousand/ha on crops according to the scheme 90x13-1 and 128 thousand/ha on crops according to the scheme 90x13-1-2, on average over three years of research, the practical plant density could be obtained up to 93-95% of theoretical density.

For example, the density of standing of plants of cotton varieties Andijan-35 and Andijan-36 on crops according to the scheme 90x13-1 managed to obtain plant density on average for 3 years 80.3-85.3 thousand / ha, and on crops according to the scheme 90x13-1-2 123.1-128.1 thousand/ha, 93-95% compared to theoretical density.

Further research showed that when cultivating on crops according to the 90x13-1-2 scheme, with an increase in plant density up to 123.1-128.1 thousand/ha, the Andijan-35 cotton variety did not give an effective result. On the other hand, there was a decrease in the yield of raw cotton. Because, due to the

morpho-biological features, the Andijan-35 variety is a 2-type branching and has a habit length of 70-80 cm and constituted widely branched plants. In this case, with an increase in plant density, despite a stronger degree of accumulation of a set of fruit elements, many-membered weak, low-yielding and small box plants developed.

According to the structure of the bush, the Andijan-36 variety, which has a compact bush with 0.5-1-type branching, when cultivated on crops according to the 90x13-1-2 scheme, with an increase in plant density, contributed to an increase in the yield of raw cotton.

Studies on the result of the yield of cotton varieties showed that on crops according to the scheme 90x13-1 with an optimal plant density of 80.3-84.3 thousand / ha, the yield of the Andijan-35 cotton variety was 37.4, and on crops according to the scheme 90x13-1-2 increased plant density up to 123.1-128.1 thousand/ha cotton variety Andijan-36 37.0 c/ha.

So, on the basis of a three-year study, we can conclude that the cultivation of the Andijan-35 cotton variety in the Fergana Valley region can be recommended 82-84 thousand / ha, and for the Andijan-36 cotton variety 115-120 thousand / ha plant density.

On the second cultivation experience, where water and resource-saving technology, it was possible to obtain 90-95% full-fledged seedlings, healthy and powerful plants of the cotton variety Andijan-37.

The results of the study show that on ordinary crops without a coated film according to the scheme 90x10-1, the density of standing of plants of the cotton variety Andijan-37 averaged 87.0-89.4 thousand/ha over three years with a decrease of 10-15% from the theoretical density standing plants.

Also, on crops where the cotton variety Andijan-37 is cultivated according to the scheme 60x15-1 with mulching with a transparent film of inter-row spacing, it was possible to obtain plant density of 94.0-95.3 thousand/ha with a decrease in plant density by 5-7% of the theoretical density standing plants. In this, it should be noted that favorable soil temperature and soil moisture contributed to full-

fledged shoots, healthy and powerful plants of the cotton variety Andijan-37 and no loss of plants was allowed.

And on 1-2 variants of conventional sowing, where without a covered film due to various climatic conditions, row-spacing cultivation and other negative influences, the plant density decreased by 12-15% of the theoretical plant density.

In both experiments, the influence of the rate of fertilizers and the irrigation regime on the standing density of the Andijan-35, Andijan-36, and Andijan-37 varieties was not observed.

So, on the basis of a three-year study, we can conclude that when cultivating according to water and resource-saving technology with row spacing mulching, which is the main element of this technology, according to the sowing scheme 60x13-1 cotton variety Andijan-37, we can recommend 95-100 thousand / ha density standing plants.

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