

## INFLUENCE OF SOWING METHODS ON THE GERMINATION OF COTTON SEEDS

<sup>1</sup>Eshmuradova Mavluda Kodiraliyevna, <sup>2</sup>Tojiyev Bekzod Gulom ugli

<sup>1,2</sup> Samarkand State University of Veterinary Medicine, Animal Husbandry and Biotechnology

<https://doi.org/10.5281/zenodo.7652324>

**Abstract.** *A scientific study was carried out to develop a resource agricultural technology for single row and two-row cultivation of cotton variety "Omad" under condition of typical gray soil.*

**Keywords:** *serozem, resource saving technology, hitch, prime number, agricultural technology, period of operation.*

In many cotton-growing countries of the world, including the United States, the effectiveness of mineral fertilizers has been studied on cotton varieties and different stem thicknesses, scientific experiments have defined that application of mineral fertilizers in N<sub>250</sub>P<sub>160</sub>K<sub>120</sub> norms, cotton planting in China depending on the soil and climate conditions in single row and double row methods, growing different cotton varieties at a seedling thickness of 120-140 thousand bushes/ha in Australia will give effective results. In all regions of our country, especially in the soil and climatic conditions of the Samarkand region, single-row and double-row planting methods of cotton are widely used in practice. From this point of view, it is urgent to carry out scientific research on the methods of planting new, promising cotton varieties, determining the optimal standards of seedling thickness and mineral fertilizers.

A number of domestic and foreign scientists, including A. Avliyokulov, K. Mirzajonov, Sh. Teshayev, N. Orazmatov, Sh. Nurmatov, S. Boriev, B. Rakhmatov, E. Abdurakhmonov, I. Rakhmatov, M. Tojiyev, R. Nazarov, Tian Li Wen, Hu Bang, F.G. Gregory, H.B. Brown and other scientists, have carried out scientific researches on testing the newly created cotton varieties in each soil and climate conditions, developing agrotechnics for growing abundant and high-quality cotton crops from them, taking into account the soil and climate conditions of our republic [3].

The growth and development of cotton, the quality indicators of the crop obtained from it depend on the biochemical processes that occur in the plant under the influence of various factors. These are the processes that depend on the climatic conditions, physical and chemical characteristics and fertility of the soil where a particular cotton variety is cultivated, humidity, temperature, the rate of application of additional nutrients during the period of operation, as well as the length and shortness of the day. Not all of the newly created cotton varieties may be suitable for the ecological conditions of different regions of our republic. This, in turn, requires the development of agro-technological measures of varieties suitable for this region [1].

Various methods of sowing seeds have been developed and used in practice in order to harvest early and high-quality cotton from cotton seed in our cotton farming. Although new methods of planting seeds have increased the cotton yield to a certain extent, the problem of early crop production has not been fully resolved. Since our country is considered the northernmost region of the world's cotton production, finding a solution to such problems remains urgent [3].

In recent years, sudden changes in the weather and the recurrence of drought climatic

conditions have created certain difficulties in cotton care due to the occurrence of water shortages. In turn, these difficulties cause a number of problems in cotton care in the cotton growing districts of Samarkand region.

During the work of the scientific researchers, the methods and agro-technologies of newly created early, high-quality cotton varieties were developed and put into practice. Today, the application and widespread introduction of seed planting methods is becoming one of the urgent problems in cotton cultivation.

Taking into account these circumstances, we conducted a scientific study on the development of a resource-saving agrotechnology of single-row and double-row cultivation of the cotton variety "Omad" in the conditions of pre-irrigated typical gray soils of Samarkand region.

According to the experimental system, the theoretical seedling thickness should be 150-180 thousand bushels/ha in both planting methods of the options where the seeds were planted in the autumn fields, and 120 thousand bushels/ha in the control option planted on flat ground.

According to the data obtained in the years 2019-2021, when the experiment was conducted, it was found that the degree of seed germination is directly related to the methods of sowing seeds.

According to the obtained data, when observations were made on the 5th day after seed planting, it was observed that the seeds did not germinate when planted in the normal way, on flat ground, and the seeds planted in autumn fields began to germinate. According to the results of the observation carried out 10 days after the sowing of seeds, in 2019, the seeds were sown in the single-row method and mineral fertilizers  $N_{200}P_{140}K_{100}$  were used in the options, on average, 34.6 and 35.3% of the seeds were germinated, with the same rate of the options of the mineral fertilizers and the seeds in the double-row method, 46.4 and 48.6 percent of seeds were germinated. Only 15.4 percent of the seeds germinated due to unfavorable conditions caused by the lack of soil moisture and temperature in the control option planted on flat ground.

Similar data were obtained in the remaining years of the experiment. Based on the obtained data, it can be noted that, compared to the simple method, the method of sowing seeds on flat ground, the germination of seeds was significantly accelerated in the method of sowing seeds in autumn fields. According to the data obtained in the years 2019-2021, when the experiment was conducted, it was found that the degree of seed germination is directly related to the methods of sowing seeds.

According to the obtained data, when observations were made on the 5th day after seed planting, it was observed that the seeds did not germinate when planted in the normal way, on flat ground, and the seeds planted in autumn fields began to germinate. According to the results of the observation carried out 10 days after seed sowing, in 2019 38.4 and 34.7 percent of the seeds in the options planted in a single row (var. 4-5) were germinated, and 46,3 and 48.5 percent of the seeds in the control options planted in a double row (var. 10-11) were germinated.

Similar data were obtained in the remaining years of the experiment. Based on these data, it can be noted that, compared to the simple method, the method of sowing seeds on flat ground, the germination of seeds was significantly accelerated in the method of sowing seeds in autumn fields. In all the options where the seeds were planted in the field, a full and even seedling was obtained due to the natural moisture of the soil. It was observed that the seeds of the control options planted in a flat field with insufficient soil moisture and temperature germinated 7-10

days later than the options planted in the paddy field.

Thus, the seeds sown in the paddy field germinated faster and healthier compared to the conventionally sown variants at optimal humidity and soil temperature and formed the appropriate seedling thickness.

In conclusion, it can be said that the germination of seeds of the "Omad" cotton variety when planted in the autumn field is significant due to the fact that the moisture accumulated as a result of winter rains is better preserved compared to the conditions planted on flat ground, and it is improved because the soil temperature in the fields is higher due to the improvement of the efficiency of sunlight utilization because of increase of the soil surface when the field is harvested. Also, full germination of seeds was achieved.

### **REFERENCES**

1. Пахтачилик маълумотномаси.-Т.:”Фан ва технология”, 2016й. 225-228б.
2. Умаров М.У., Икромов Ж. Изучение и создание оптимальных физических свойств почв в целях интенсификации хлопководства.-Ташкент: фан, 1979.-с. 34-36
3. Назаров М., Исомиддинов М. В. Мамдалиев Т. Ёўза илдининг ўсишига тупроқнинг физик хоссаси ва ўғитларнинг таъсири // Агро илм, 2008- №8.-Б.20.
4. Рыжов С.Н., Погосов Ю.А. Посевы хлопчатника по грядомигребням // Сб.трудов САО ВАСХНИЛ.- Ташкент, 1976.- №1,-С. 13-15.