

Development of the Selection Process in our Republic and its Practical Significance

Jamshid Yuldashev Qambaraliyevich

Candidate of technical sciences, Namangan Institute of Engineering and Technology

Email: Jamshid23041981@gmail.com

Tel: +998972556744

Umarov Akbarjon Axrorjon o'g'li

Assistant, Namangan Institute of Engineering and Technology

Email: umarovakbar502@gmail.com

Tel: +998999797953

Annotation: This article contains information about the scientific work carried out in recent years in the field of selection of the cotton growing industry of our republic. The achievements of the conducted scientific researches are analyzed.

Key words: Cotton, fiber, fiber length, fiber thickness, grade, class, type, linear density, strength, relative strength, waste, selection, testing.

In our republic, in the field of breeding and seed production, methods such as various hybridization, changing the plant species under the influence of drugs, exposure to various rays are used. Most of the created varieties are not improved to the level of a mature variety population, without being enriched with genotypes with high potential, the variety is sent to the test and propagated, and such varieties with improved genetics, which do not have the ability to change, cannot live long in more areas and are excluded from zoning. On the contrary, with the help of improved methods of genetics and selection, all the biological and valuable features of the (stable) varieties, which have been created with the help of genetic composition, have become a balance, develop from generation to generation, and increase their productivity [1,2].

Cotton farming is an important branch of production in our country, and promising cotton varieties being created play an important role in its development. In the development of this industry, not only the economic characteristics of varieties (fastness, fiber output, fiber length, meeting the industrial demand), but also the resistance to various diseases and pests, adaptation to extreme conditions or endurance are important. It is important to study the wild and semi-wild forms of cotton from different countries, which retain many useful characteristics, in order to collect such characteristics in varieties. Samples of cotton with valuable characteristics can be found in the collection that has been studied and preserved for many years [3,4,5].

Due to the great attention paid to the development of the cotton and textile sector in our country, abandoning the monopoly of cotton made it possible to further improve its cultivation, create new fruitful varieties, and improve the quality of fiber.

World breeders have been working on the creation of a medium-fiber cotton variety for several decades. Because every additional millimeter of fiber of this grade increases its value. However, in the process of improving the quality of the fiber, it can damage its early maturity and productivity. At the same time, it is not easy to improve the quality of medium fiber cotton, to accelerate the flowering and opening, and also to increase the yield. Solving this task requires a lot of time and money [6,7,8,9].

The solution of this problem ensures the stability of production in agriculture, achieving high results in small cultivated areas during the short growing season. It also reduces the negative impact of economic activities on the environment.

The opportunities being created and special attention being paid to the development of genetic engineering of agricultural crops in our country allows our scientists to create global innovations in the field of cotton genomics and genetic engineering. In the last ten years, the scientists of the Center of Genomics and Bioinformatics of the Academy of Sciences of the Republic of Uzbekistan were the first in the world science to describe the genes that ensure the important characteristics of cotton, in particular, fiber quality,

flowering, quick ripening and yield, resistance to various biotic and abiotic factors. Also, high-value plants were created from some cotton cells, and for the first time in Uzbekistan, the technology of reducing the activity of a gene (gene-knockout) for cotton was developed. This technology is protected by patents in more than 150 countries. Through this technology, high-quality fiber varieties "Polar-1", "Polar-2", "Polar-3" and "Polar-4" were created without using external genes.

It is worth noting that this new technology made it possible to solve the main tasks of traditional cotton selection. For example, for the first time in the history of cotton production, "Porloq" varieties were created from the medium-fiber cotton variety, whose main indicators of important agronomic characteristics were improved in a short period of time. These varieties have high-quality fibers of type 1-2 with a length of 38-42 millimeters. Based on this, the price of this new type of fiber was changed in our country. It is sold 12 percent more expensive than ordinary fiber [10,11,12,13].

International experts highly appreciate the fiber of "Porloq" varieties. In particular, the vice-president of the "Cotton Incorporated" company Heck Cater (USA) expressed the following opinion in this regard: the quality of the fiber of the "Porloq" variety can be compared with the best fiber of the "SJV Asala" cotton variety grown in California. By carding and spinning fiber of the "Porloq-1" variety, high-quality kalava can be obtained.

In addition, for the first time in world science, our breeding scientists determined the length of recombination blocks in the cotton genome, identified DNA markers responsible for fiber yield and quality. These important achievements made it possible to create an effective "marker-based selection" (MAS) technology that speeds up the traditional selection of plants several times in our country.

Today, selection, seed breeding, renewal of varieties, introduction of new fast-ripening varieties of cotton with high fiber quality into practice and their rational placement in different soil and climate conditions of our country have been determined to be a priority state task.

Based on the soil and climate conditions, 5 regions are defined for the placement of varieties in our republic:

1. Regions where very fast varieties are planted. This region is located at an altitude of 900–1300 meters above sea level, with an effective temperature range of 1900–2000°C. includes Kosonsoy and other districts.

2. Regions where Tezpushar varieties are planted. This includes the plain regions of the northern regions, the north of the Republic of Karakalpakstan, the mountainous districts of Tashkent and Samarkand regions, where the effective temperature is 2000-2150°C.

3. The region of the central regions, the plains and the mountain regions at an altitude of 100-850 meters above sea level are included.

4. The regions of Tashkent, Andijan, Khorezm and Surkhandarya regions with good water supply are included.

5. Regions where fine fiber varieties are planted.

These cotton field regions determine to a certain extent the yield and fiber quality of the technical crop, taking into account the weather conditions, that is, insufficient heat. Prior to frost, early-harvested cotton is known to have more first grade fiber than late-harvested cotton. The fiber yield of cotton belonging to the first industrial grade is 32-34%, while the fiber yield of cotton belonging to the third-fourth industrial grade is 24-28%.

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