

The Existing Ginning System in the Cotton Ginning Industry

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Annotation. After the independence of Uzbekistan, radical market reforms were carried out in all sectors and industries, including agriculture and related industries, including the primary processing industry [1]. This, in turn, has significantly increased the quality of cotton fiber grown in the country, as well as the potential for state exports. During the years of independence, Uzbekistan has done a lot to grow cotton, process it and increase its competitiveness in the world market. Increasing the purchasing power of Uzbek cotton in regional and global markets through the production of consistent and high-quality cotton products has been identified by the state as a key priority. The main direction of the reforms is to ensure high yields of fiber from each cotton variety by reducing the cost of production by

A Bi-Monthly, Peer Reviewed International Journal
Volume 7

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acting new equipment and technologies to the cotton industry, including the primary processing industry.

Key words. Cotton, fiber, raw materials, cultivation, market, analysis.

Cotton fiber has become one of the leading fibers in the 21st century as an important raw material for the textile industry. In the world, cotton is grown by about 90 countries a year, and more than 100 countries consume it as a raw material. At the end of the XX century, at the beginning of the XXI century, the production of cotton fiber stabilized, from 34-35 million hectares of cotton to 19.5-20 million tons per year. Today, China, India, Pakistan, the United States, Turkey and Uzbekistan are the leading countries in the production of cotton. These countries account for three-quarters of the world's cotton fiber production. Uzbekistan ranks sixth in the world in terms of cotton production and second in terms of exports. The cotton fiber produced in the country is distinguished by its purchase in the world market.

After the independence of Uzbekistan, radical market reforms were carried out in all sectors and industries, including agriculture and related industries, including the primary processing industry [1]. This, in turn, has significantly increased the quality of cotton fiber grown in the country, as well as the potential for state exports. During the years of independence, Uzbekistan has done a lot to grow cotton, process it and increase its competitiveness in the world market. Increasing the purchasing power of Uzbek cotton in regional and global markets through the production of consistent and high-quality cotton products has been identified by the state as a key priority. The main directions of the reforms are the introduction of new techniques and technologies in the cotton industry, including the primary processing industry, to ensure high yields of fiber from each cotton variety, to reduce the cost of production. Analyzes show that if before 2000 in the traditional market 62% of Uzbek fiber was supplied to European countries, 23% to MDX, 15% to Asian countries, in recent years the economic globalization of the world market has also affected the cotton industry. showed. China's accession to the World Trade Organization, one of the world's leading cotton producers, has changed the geography of the cotton market.

- To date, more than 60 percent of Uzbek cotton has moved to Asian countries (mainly Southeast Asia), with the rest moving to Europe, Russia and other CIS countries. This, in turn, has laid the foundation for the formation of a new cotton market in the Asian region. Along with the cotton sector, the primary cotton processing industry plays an important role in increasing the country's cotton export potential. In recent years, the enterprises of the cotton industry are introducing new

devices and equipment for primary processing of cotton that meet the requirements of coordinated technology, and every five years 15-20 of the existing enterprises are reconstructed and put into production. Such technical and technological measures ensure timely pre-processing and uninterrupted delivery of the product to consumers without destroying the harvested cotton. However, despite the improvement of traditional technological systems, the full production of cotton fiber from each variety is not technologically satisfactory. Therefore, it has become clear that the task set for scientists and specialists is to ensure the full production of cotton fiber through unconventional approaches and scientific research. In order to address the current issues, on the basis of in-depth scientific research conducted by specialists of JSC "Pakhta Tozalash IChB", the Association "Uzpakhtasanoat" and the Tashkent Institute of Textile and Light Industry, a liner LPZ-320 and ZS seed linter preparation devices. Jin DR-119, linter LPZ-320 and ZS seed linter preparation device with original technical and technological solutions, jin DR-119, received a patent for the utility model № FAP 00247 from the State Patent Office of the Republic of Uzbekistan (Appendix 1). Working drawings and industrial experiments of Jin were prepared by JSC "PAXTAGIN KB" (CKB po khlopkoochistke) and installed in the system of technological processes in the joint-stock company "Khayrabod Pakhta" in the system of "Surkhanpakhtasanoat" regional joint-stock company. tests were conducted and on April 8, 2006, the Interdepartmental Commission recommended that the sertia be produced (Appendix 6). Patent No. AP FAP 00225 for a utility model was obtained from the State Patent Office of the Republic of Uzbekistan for a liner machine LPZ-320 (Appendix 2). An industrial-experimental copy of Linter was prepared at the Bektemir Experimental Cotton Ginning Joint-Stock Company, installed in the technological process of this enterprise, and production tests were conducted, and on July 30, 2007 it was recommended for serial production by the Interdepartmental Commission (Appendix 13). The patent for the invention "IAP 03257" was obtained from the State Patent Office of the Republic of Uzbekistan for "Method of preparation of cotton seeds for lertilization" (Appendix 5).

- Patent No. AP FAP 00175 was obtained from the State Patent Office of the Republic of Uzbekistan for the utility model ZS "Seed Loading Device", designed to improve the safety and environmental conditions of seeds for preparation for labeling and unloading in warehouses (Appendix 3). An industrial prototype of the device was installed in the technological process of the Poytug ginnery and tested for production and acceptance. On April 9, 2005, the Interdepartmental Commission recommended that the device be mass-produced (Appendix 7). The new design of the seed drill in the device received a patent for the utility model № FAP 00229 from the State Patent Office of the Republic of Uzbekistan (Appendix 4). The purpose and objectives of the study. To increase the fiber yield by completely separating the spinning fibers from the original cotton in the ginning plants, to increase the staple mass length of the fiber by reducing the amount of short fibers in the fiber, the amount of fiber defects and impurities in the fiber, and to reduce mechanical damage, to achieve high efficiency of gin and linters, to perform the ginning process in the second stage, at different densities of the raw material roller, and to develop the technological process of softening the epidermis layer of the seed by additional wetting. The following tasks have been set to achieve this goal:
 - To study the laws of the effect of the reduction of total fluff on the seed on the quality of the fiber and other parameters;
 - The first stage is the creation of a short-staple fiber gin structure that separates the fiber from the fiber after spinning, which is suitable for short spinning of staple lengths;
 - Development of recommendations for determining the amount of raw cotton for all industrial and selection varieties on the level of total fluff of the first and second stage seeds;
 - To study the effect of the second stage of ginning on the process of linting of seeds in the technology of primary processing of cotton;
 - Study of the design of the liner;
 - Development of a method of preparation of ginned seeds for linting;
 - To give recommendations for the implementation of a phased ginning on a scientific basis in order to increase the quantity, quality and productivity of fiber and down in ginneries.

Research method. The work consists of theoretical and practical research. Conduct research in the laboratory and in the workplace.

Theoretical research on higher mathematics, applied mechanics, machine mechanics was carried out using a wide range of computer technologies. Practical research is carried out by the method of mathematical planning and by determining the efficiency of machine work.

Scientific novelty.

1. Quantities of first and second stage post-demon seeds according to the degree of complete hairiness have been scientifically substantiated and recommended.
2. A short-staple fiber gin was created for the second stage ginning, and its optimal saw spacing, the distance between the seed comb and rotary-accelerator blades and the saw cylinder, the size of the saw protrusion from the grate grate were based on scientific research and the working camera was selected.
3. A new system linter machine with a supply system and a method of preparing the seed for linting and a device for its implementation have been developed, the parameters of which have been substantiated.
4. A step-by-step ginning and linting technological process has been developed, which will reduce the production processes in ginneries and increase their efficiency.

The technical and technological novelty of the research in the dissertation is confirmed by the patents issued by the State Patent Office of the Republic of Uzbekistan № FAP 00247, FAP 00225, IAP 03257, FAP 00175 and FAP00229.

The practical significance of the work. Application of the developed step-by-step ginning and linting process in ginneries to increase the amount of fiber produced by the enterprise The presence of wool at the level of chemical industry demand along the staple length and reduce the cost of production, increase purchasing power, improve occupational safety, environmental conditions and ensure a compact technological process.

Developed step-by-step ginning and linting technological process "Surkhanpakhtasanoat" in the system of joint-stock companies "Angor experimental", "Khayrabod pakhta", "Kumkurgan", "Tashkent-cotton experimental" in the system of joint-stock company "Tashkentpaxtasanoat" Dalvarzin was introduced to the technological system of Karakul and a number of other ginneries in the system of Bukhara Regional Cotton Joint-Stock Company.

Discussion of the case. The main parts of the dissertation were presented at the Republican Industrial Fair "Uzpakhtasanoat-2008" and the Republican Industrial Fair of Innovative Ideas and Projects and the Republican Fair of Innovative Ideas and Projects and presented at the Uzbek Radio and Television Company.

At the international scientific-practical conferences of the Tashkent Institute of Textile and Light Industry (2005-2008 *). Discussed and approved at the scientific seminar of the department "Preliminary processing of cotton", interdepartmental seminar, scientific seminar "NamMII" (2007), JSC "Cotton ginning IChB".

Publication of results. Published 40 scientific articles and patents on the dissertation.

The structure and scope of the work. The dissertation consists of an introduction, six chapters, general conclusions and recommendations, bibliography and appendices. The dissertation consists of 341 pages and includes 66 figures, 47 tables and 115 references.

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