



**STUDYING THE IMPACT OF GINNING MACHINE AUTOMATION
ON PRODUCTIVITY THROUGH A PROGRAMMING SYSTEM**

Master's student

Ibragimov Zarifulla Sharifullayevich

Associate Professor

Gadaev Nuriddin Erdashevich

Jizzakh Polytechnic Institute

Abstract: This article examines the importance of automation in increasing the productivity of the technological process as a result of implementing computer programs for the separation of fiber from seeds (jin) using a gin machine at cotton ginning plants.

Key words: cotton, cotton seeds, fiber, working camera, programming.

Large-scale scientific research is being conducted worldwide aimed at improving the technology of primary cotton processing, including the process of separating cotton fiber from seeds, as well as the technique and technology. In this direction, including the development of scientific foundations for increasing the efficiency of the cotton ginning process, special attention is paid to improving product quality and reducing production costs by accelerating the widespread introduction of modern machinery and technologies into production [1]. At the same time, the creation of technologies that allow for the preservation of initial fiber and seed quality indicators during the separation of cotton fiber from seeds, the reduction of energy consumption during the process, and the control of product quality, as well as advanced equipment for separating cotton fiber from seeds that consumes less material and energy, has risen to the level of current issues in the industry.

In our republic, special attention is paid to increasing the production of finished products with high added value based on the deep processing of raw cotton, improving the structure of the country's cotton ginning industry, reducing the cost of cotton products based on technical and technological reconstruction, and ensuring its competitiveness by improving quality indicators. The Strategy of Action for the Further Development of the Republic of Uzbekistan for 2017-2021 defines the tasks of "...increasing the competitiveness of the national economy, reducing energy and resource consumption in the economy, and the widespread introduction of energy-saving technologies into production." Based on the theoretical and practical analysis of the process of separating raw cotton fiber from seeds, it is important to improve the working chamber of the ginning machine and increase the



efficiency of the ginning process through it, in particular, to increase the productivity of the ginning process and reduce energy consumption by improving the adhesion of the cotton fiber to the saw teeth and regulating the speed of the raw cotton roller [2].

Currently, raw cotton imported by farms is accepted at cotton ginning plants based on state standards and placed in stacks. For the production of fiber and seeds, which are the main products of cotton ginning enterprises, the raw cotton is separated from the seeds in a ginning machine, which is the main machine of the enterprise, after passing through several sequential technological processes [3]. There are two types of gin machines: saw and roller gin machines. Saw gins are used to separate the fiber from the seeds of medium-staple raw cotton, and roller gins are used to separate the fiber from the seeds of fine-staple cotton. Since we primarily grow medium-staple cotton, saw gins are widely used. Among them are mainly saw gins of the 4DP-130 and 5DP-130 models.

4DP-130 saw gin feeder cross-section diagram

1 - feeder; 2 - feed rollers; 3 - peg drum; 4 - mesh surface;
5 - sludge conveyor; 6 - chute; 7-working chamber; 8 - upper beam; 9 - apron;
10 - grate; 11-seed comb; 12 - saw cylinder; 13 - scraper; 14 - dead conveyor; 15-fiber separation air chamber;

In the process of ginning, i.e., the separation of fiber from seeds, the yield of seeds and fiber is 32-34% fiber and 56-60% seeds according to the standard. However, due to the defects of the gin machine, there are cases of violation of this proportion [4]. One of the main reasons for this is an increase in the density of the raw material roll formed in the working chamber of the gin machine. Several scientific studies have been conducted to solve this problem. However, a program for controlling the working parts of the gin machine and the density of the raw material roller has not yet been developed. To solve this problem, we proposed a program that constantly monitors the pressure force at any point on our raw material roller. With the help of this program, we can control the pressure at point R of the raw roller layer for any example, and as a result, we can maintain the density of the raw roller at a constant level.

USED LITERATURE

1. Sh.M. Mirziyoyev. Report at the meeting of the Cabinet of Ministers dedicated to the most important priorities of the Action Strategy program of the country's economic program for 2017-2021. <http://uza.uz/en/politics/uzbekistan>



2. E.Z. Zikriyoyev "Primary processing of cotton" Textbook. Tashkent, "Mehnat," 2002.
3. F.B. Omonov "Initial Cotton Processing Directory," Tashkent, "Voris" Publishing House LLC, 2008.
4. G.J. Jabbarov et al. "Technology of primary processing of cotton seeds," Tashkent, "O'qituvchi," 1987.