E-ISSN:2996-5004

International Journal of Human Capital and Innovative Management, 2024, 1-3
https://pubjournals.com/IJHCIM
Volume: 1 | Number: 1 (2024) January

The Process Of Cleaning Seeded Cotton

Kholyigitov Omonboy Alimovich Utashev Zafar
Jizzakh Polytechnic Institute

***Correspondence :** Kholyigitov Omonboy Alimovich
xolyigitovomonboy@gmail.com

Received: 06-01-2024
Accepted: 10-01-2024
Published: 11-01-2024

Abstract
In this article, samples of different cotton varieties were taken and experiments were carried out in order to investigate the effect of changes in the moisture content of seed cotton during processing, cleaning efficiency, and the amount of total defects.

Keywords
Cleaning Process, Complex Tangled Fiber, Drying Process, Industrial Grade, Selection Grade, Tangled Fiber, Total Impurity.

Introduction

In cotton ginning enterprises, seeded cotton with a moisture content of up to 14% is sent to the cleaning departments for production without passing through the drying and cleaning departments. Therefore, in accordance with the "Coordinated technology of cotton preliminary processing" (PDI 01-2012), it is allowed to install cotton drying equipment in cleaning departments. The operation procedure (mode) of cotton drying or drying equipment depends on the industrial and selection type of seeded cotton, the initial moisture content, the amount of moisture absorption, and the efficiency of the equipment.

Natural drying - mostly hand-picked seeded cotton is dried in field conditions, in open areas in sunlight (in the sun); Artificial drying, drying of low varieties of machine-picked and hand-picked cotton in various construction equipment. The sun drying method is widely used when it is necessary to reduce the moisture content of seed cotton by 2-3%. For this, special areas are leveled in field sheds, and their surface is covered with straw clay or paved. Depending on the humidity, seeded cotton is spread on the ground in a thickness of 10-15 cm and placed in the sun, and to speed up drying, it is periodically stirred and turned over.

Results and Discussion

Artificial drying of seeded cotton is carried out in special drying shops in cotton ginning factories and cotton preparation points outside the factory. In such workshops, seeded cotton with moisture and dirtiness above the norm is dried and cleaned. The drying equipment installed in the drying-cleaning shops can be air-fountain, chamber-screw and drum depending on the method of heat transfer to seeded cotton. In the cotton ginning industry, drum dryers of various designs are used, which are more efficient in terms of higher moisture loss and higher throughput of dried cotton.

The primary task of cotton ginning companies is to clean the seed cotton picked from the cotton fields as well as possible, thus reducing the degree of damage to the fibers extracted from it as much as possible. Taking into account these factors, cotton ginning enterprises in our country are gradually being equipped with the most modern equipment. Despite the use of such measures, some indicators of seed cotton limit the possibilities of maximum cleaning.

No matter how modern the equipment used is, moisture content is very important for processing raw materials. Because, if the moisture content of seeded cotton is high, it becomes difficult to clean it from impurities, the amount of tangled fiber in the fiber, the amount of complex tangled fiber, the amount of impurities increases, as a result, the quality indicators of the fiber and the products obtained from it deteriorate. In addition, the lower than normal moisture content in seeded cotton leads to a decrease in the physical and mechanical properties of the fiber. In order to prevent such situations, it is necessary to ensure the moisture content of seed cotton in the enterprises with the optimal moisture content specified in the standards. In addition to the moisture content of seed cotton, the quality of selection has a great influence on the efficiency of cleaning. Because each selected type of seeded cotton has its own characteristics. Seed cotton picked from cotton fields is accepted in cotton ginning factories according to moisture and dirtiness. If the humidity is high, it is dried and cleaned.

In the process of processing seeded cotton, higher than normal humidity causes defects in cotton fiber and increase in waste. If the moisture content of seeded cotton is higher than the norm, the amount of tangled fiber, complex tangled fiber, impurities in the fiber will increase, and the amount of husked fiber, beaten or damaged seeds will decrease. The more the seeded cotton undergoes technological processes, the better it is cleaned of impurities, but the content of beaten or damaged seeds, tangled and complex tangled fibers, and husked fibers increases. In addition, due to the lower than normal humidity, the increase in the amount of bark fiber and knots, hit or injured seeds causes an increase in the amount of general defects and waste in cotton fiber. The cleaning efficiency of seeded cotton of some selection varieties is low. The price of cotton fiber is determined according to the classes according to the amount of dirt. If the amount of defects and

waste in the cotton fiber is higher than the norm, the quality indicators of the fiber will deteriorate, and the physical and mechanical characteristics of the threads obtained from it will not remain unaffected.

Cotton fiber is divided into a number of grades, i.e. high, good, medium, dirty and poor, depending on the degree of dirtiness, and prices vary according to these grades. Changes in the amount of defects and waste in the fibers of the sampled varieties were determined. Accordingly, the amount of total defects and waste of Namangan-77 selection grade cotton fiber decreased by 38.3%, the amount of damaged seeds decreased by 35.1%, the amount of bark fiber increased by 15.8%, the amount of knots increased by 28.8%, and the amount of impurities increased by 61.9%. decreased by 38.5%, the amount of total defects and waste in Andijon36 selection grade cotton fiber, the amount of struck or injured seeds decreased by 47.8%, the amount of bark fiber decreased by 21.8%, the amount of knots decreased by 36. increased by 1%, the amount of impurities decreased by 51.8%.

Conclusion

It can be said that after the initial processing of cotton, the cleaning efficiency in terms of moisture content is higher than the cleaning efficiency of Andijan-36 cotton fiber from defects.

References

Bakhodir, E. (2021). Effects of Change on Cotton Harvesting Physical and Mechanical Performance. *International Journal of Innovative Analyzes and Emerging Technology, 1*(7), 9-13.

Tillayev, M. T. (2018). *Cotton preliminary processing technology and equipment: Study guide*. Tashkent.

Kholmirzayev, Q. I. (2017). *Primary treatment of fibrous materials: Study guide*. Tashkent.

Tillayev, M. T. (2015). *Technology of primary processing of cotton: Textbook*. Tashkent.