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EFFECT OF CLEANING EFFICIENCY OF DIFFERENT SELECTION VARIETIES OF COTTON PRIMARY WORKING PROCESS AND INFLUENCE ON SEED CONTAMINATION AMOUNT

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Annotation: *in this article, it was conducted in "ZAMIN ANGOR CLUSTER" LLC and "SAX CLUSTER" cluster system enterprises in Surkhandarya region. For him, the efficiency of cleaning from small and large impurities of promising selection varieties Termez-49, Surkhan-101, Surkhan-9, Termez-208 and Surkhan-102 grown in some farms of Denov and Shorchi districts was studied in the laboratory of the enterprise in the cluster system*

Key words: *the efficiency of cleaning from small and large impurities, the amount of defects and waste in the fiber, the adhesion strength of the fiber to the defects, the flexibility of the selection varieties*

I. INTRODUCTION

In the current conditions, it is necessary to create cotton varieties with high yield, quick ripening and quality indicators, which meet the demand of the population, for the production of ready-made products with high demand that meet the demand of the population. However, some of the new varieties being created are being withdrawn

from planting in short periods of time. Therefore, first of all, it is necessary to pay close attention to the field of breeding. In addition, the effectiveness of cleaning from impurities in cotton ginning plants of some varieties being created is low [1].

Cotton ginning enterprises of our republic are equipped with modern type of equipment with maximum cleaning capability. However, in the processing of raw materials in this equipment, selection varieties are of great importance. Because, during the initial processing of cotton, the cleaning efficiency and quality indicators of selection varieties are different. For example, some breeding varieties are less effective in removing small and large impurities, but the fiber quality indicators are high. Therefore, during the processing of selection varieties in cotton ginning enterprises, the optimal option for each selection variety is developed [2].

Cotton is accepted from farms to cotton processing centers according to moisture and dirtiness. If the moisture content is higher than the standard indicators, it is passed through drying-cleaning sections before acceptance, and then accepted. If the moisture content of the cotton is higher than the standard parameters, it is not well cleaned from small and large impurities, as a result, the finished products obtained may be of poor quality. Therefore, in cotton ginning plants, any amount of moisture is dried to a specified moisture content in the standard, and only then is involved in the cleaning process.

In the cotton growing fields of our republic, our breeding scientists have been creating a number of varieties of cotton that are resistant to various diseases, have high productivity, and mature in a short period of time. The changes in the quality indicators of cotton during the initial processing and spinning processes of these selection varieties are different. Therefore, cotton ginning and spinning enterprises develop optimal options for each breeding variety. However, it is also possible to obtain low-quality threads in the process of spinning raw materials pre-processed according to the optimal option in cotton ginning enterprises. Because the yield potential of these selection varieties is also different.

The ginning process is also important to maintain the quality of cotton. Because, during the cleaning process, the fiber or seed may get various injuries, as a result, the number of accidents in the subsequent processes will increase by itself, and the quality indicators of the fiber will deteriorate. Therefore, organizing the cleaning process on the basis of a fixed chain makes it possible to maintain good product quality [3].

In the drying-cleaning workshops of cotton processing enterprises, the initial moisture content of I-III grade cotton should be up to 11%, and the lower grade should not be higher than 13%. Because it is in the set standard, it causes deterioration of fiber quality indicators or burning during the storage period of cotton. In some scientific and research works, in order to apply the specified temperature and

humidity in cotton gins, S-4880, 175-F and White-Gold varieties were dried at 1600C, 2000C and 2400C to 8-9%, and the amount of fiber defects and waste increased with temperature. It has been shown that it has increased or that the level of purification of seed cotton has increased [4].

The reduction of defects or the increase in the degree of purification of seed cotton resulted in a decrease in the adhesion force of the fiber to the defects and the fiber tortuosity [4]. To clean small defects in cotton, S-4727, Tosh-1 and 8763-I grades were obtained, using different types of cleaning equipment, and by increasing the number of drums, the cleaning rate of cotton increased from 20% to 98%. That is, the degree of cotton cleaning in the four-drum cleaning equipment was higher compared to the OXB-10M equipment. If we increase the number of drums to 8, then the seed defects increased from 0.06% to 0.80%, besides, the number of struck or injured seeds, the amount of complex tangled fiber was less [5]. The installation of six-drum cleaning equipment at cotton gins increased the cleaning level of S-4727 cotton variety by 16% compared to 6A-12M equipment, and 8763-I cotton variety by 30% compared to OXB-10 equipment. After cleaning the cotton, the seed defects were less, the amount of defects and waste in the fiber content was 0.3-0.5% due to the reduction of tangled and complex tangled fiber [6].

II. METHODOLOGY

Moisture content is important in cotton gins. If the humidity of the cotton is higher than the standard parameters, the efficiency of cleaning from small and large impurities decreases. On the contrary, if the amount of moisture meets the standard requirements, the cleaning efficiency of cotton will increase, and the quality indicators of yarn and finished fabrics will be improved.

At present, in the processing of different selection varieties in cotton ginning enterprises, as a result of drying at the same temperature, their cleaning efficiency is also different. Rather, it is desirable to have an optimal drying temperature and humidity for each breeding variety. Therefore, at present, the effectiveness of cleaning from small and large impurities of promising and regionalized varieties of various selections in Surkhandarya region was determined, and the test results obtained are presented in Table 1.

Table 1

Variation in the cleaning efficiency of different breeding varieties from small and large impurities

p/p	Indicators	Selection varieties				
		Termez-49	Surkhan-101	Surkhan-9	Termez-208	Surkhan-102
cotton in riot						
1.	Moisture content of cotton in the pile, %					
	Amount of total impurities, %	8,70	8,90	8,80	9,00	9,10
	including:					
	the amount of small impurities, %	2,56	2,70	2,78	2,80	2,80
	amount of large impurities, %	0,78	0,84	0,80	0,86	0,85
		1,78	1,86	1,98	1,94	1,95
2.	Moisture content of cotton after the drying process, %	8,2	8,1	8,2	8,0	8,0
	Amount of total impurities, %	0,79	0,78	0,83	0,96	0,90
	including:					
	the amount of small impurities, %	0,52	0,46	0,50	0,54	0,62
	amount of large impurities, %	0,27	0,32	0,33	0,42	0,28
3.	Moisture content of cotton after the cleaning process, %	7,4	7,6	7,5	7,7	7,4
	Amount of total impurities, %	0,51	0,47	0,54	0,50	0,49
	including:					
	the amount of small impurities, %	0,34	0,33	0,39	0,35	0,31
	amount of large impurities, %	0,17	0,14	0,15	0,15	0,18

III. RESULTS AND DISCUSSION

The change in the cleaning efficiency of cotton of different selection varieties from small and large impurities was studied. If we compare the obtained test results with respect to the indicators of the cleaning efficiency of the cotton stored in the garam, the Termez-49 selection grade cotton after the drying process is 69.1%, after the cleaning process is 80.1%, the Surkhon-101 selection grade cotton is 71.1% after the drying process. %, 82.6% after the cleaning process, 70.2% after the Surkhon-9 selection cotton drying process, 80.6% after the cleaning process, 65.7% after the Termez-208 selection cotton drying process, increased by 82.1% after the cleaning process, 67.9% after the Surkhan-102 selection cotton drying process, and 82.5% after the cleaning process. It can be seen from the analysis that the cleaning efficiency of Surkhan-101, Termez-208 and Surkhan-102 selection varieties of cotton is higher than other selection varieties of cotton.

Cleaning efficiency of various selection varieties in cotton gins depends primarily on their moisture content and properties. There are selections that have good fiber quality but are hard to clean selections. In short, from the analysis of the research results, the efficiency of cleaning from small and large impurities after the cleaning process of different breeding varieties was 80.6% to 82.6%. It follows from this that it was determined that the cleaning efficiency of Surkhon-101, Termez-208 and Surkhon-102 selection varieties of cotton is higher than other selection varieties of cotton. In addition, the effect of the initial processing of cotton on the change in the amount of dirt in the seeds of different breeding varieties was studied.

Damage rate increases as a result of improper drying of cotton or drying at high temperature in cotton ginning plants, as a result of decreasing the amount of moisture in the seed. The cotton seed has an irregular and symmetrical shape. The seed consists of chalazae, lateral and micropyle parts. For example, when we dry cotton at high temperatures, there is a greater possibility that the husks will move with the fiber, especially since the chalaza part of the seed is looser. These indicators differ in selection varieties. Therefore, some selection varieties should be dried at high humidity, some selection varieties should be dried at medium humidity.

In the process of processing cotton in cotton ginning enterprises, especially during cleaning and ginning, the number of defective seeds increases. In addition, one of the main reasons for the increase of these indicators is long-term storage of cotton in the garam, moisture content exceeding or decreasing the standard indicators, not cleaning well, and secondly, the level of resistance of different

selection varieties to the effects of technological processes is different. Therefore, optimal conditions are determined for each breeding variety in cotton ginning enterprises. If the seed is above the established standards for the level of contamination, it is accepted for lower varieties. In addition, there are oil defects in the seed, which include bruised or damaged seeds, half-kerneled seeds, and discolored or damaged kernels. This is also of great importance in determining the type of seed. Defective kernels include kernels with black kernels, kernels with black kernels, damaged kernels with less than half kernels, kernels with empty kernels.

Ginning is the process that most negatively affects the quality of the fiber and seed in the cotton gin. The teeth of the saw will break the seeds with moisture content below the standard values or cause the number of cracks on the surface of the seed to exceed. As a result, it causes a decrease in the number of seeds and an increase in technical seeds. In addition, the seed of some selection varieties will not be strong. It can even be damaged during cleaning. In addition, cracks are observed mainly during the cleaning and drying processes.

When the quality of seed cotton decreases, during the separation of fiber from the seed in the gin equipment, about 40% of the fibers are mechanically damaged, and the amount of defects and waste in the fiber content increases 2-3 times. Some harmful defects, such as bark fiber and nodules, are increased. As a result, the quality indicators of finished products obtained from fiber deteriorate. In addition, the degree of damage increases as a result of improper drying of seeded cotton or drying at high temperature in cotton ginning enterprises, as a result of the decrease in the moisture content of the seed. The cotton seed has an irregular and symmetrical shape. The seed consists of chalazae, lateral and micropyle parts. For example, when we dry cotton at high temperatures, there is a greater possibility that the husks will move with the fiber, especially since the chalaza part of the seed is looser. These indicators differ in selection varieties. Therefore, some selection varieties should be dried at high humidity, some selection varieties should be dried at medium humidity.

In order to study this feature of cotton seed, scientific and research work was carried out. For this purpose, the properties of the seeds of various selection varieties after the initial processing at the cotton ginning plant were studied, such as mechanical damage, hairiness, residual hairiness, the part of the seed husk with fibers, and the amount of cracked seeds.

The results of the scientific research are presented in Table 2.

Table 2

Changes in the amount of impurities in the seed of different breeding varieties after the germination process

p/p	Indicators	Selection varieties				
		Termez-49	Surkhan-101	Surkhan-9	Termez-208	Surkhan-102
1.	Amount of defective seed, %	1,5	1,6	1,1	1,2	1,8
2.	Mechanical damage to the seed,%	2,15	2,34	2,12	1,96	2,76
3.	Hairiness of the seed,%	9,4	9,4	10,2	9,6	10,5
4.	Residual fiber of the seed,%	0,109	0,102	0,118	0,095	0,118
5.	The amount of mineral and organic impurities, %	0,13	0,14	0,12	0,14	0,15

The change in the amount of impurities in the seeds of different breeding varieties after the germination process was studied. If we compare the obtained test results with the parameters of cotton seed of the selection grade Termez-49, the amount of defective seed of the selection grade cotton Surkhan-101 increased by 6.2%, mechanical damage increased by 8.1%, hairiness did not change, residual fiber by 6.4% decreased, the amount of mineral and organic impurities increased by 7.1%, the amount of defective seeds of Surkhan-9 selection grade cotton decreased by 26.7%, mechanical damage decreased by 1.3%, hairiness by 7.8%, residual fiber by 7.6 increased by %, the amount of mineral and organic impurities decreased by 7.6%, the amount of defective seeds of Termez-208 selection grade cotton decreased by 20.0%, mechanical damage decreased by 8.8%, hairiness by 2.68%, residual fiber by 12 decreased by .8%, the amount of mineral and organic compounds increased by 7.1%, the amount of defective seeds of Surkhan-102 selection grade cotton by 16.7%, mechanical damage by 22.1%, hairiness by 12.1%, residual fiber By 7.1%, the amount of mineral and organic compounds increased by 13.35%.

IV.CONCLUSION

The results of the study showed that in the process of processing cotton of different selection varieties, the mechanical damage of the seed, the amount of defective seed and the hairiness of the seed were found to be higher in the selection varieties Surkhan-101 and Surkhan-102 than in other selection varieties.

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