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Determining the Oil Content of Cotton Ridges

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Annotation: The cotton ridges differ sharply in the oil content of the seed. The sign of oil content does not correlate with the length of the fiber and other valuable technological qualities of cotton fiber.

Keywords: oil content, quality, fibers, technology, cotton, length, kernels, breaking load, metric number.

When used for industrial purposes for oil extraction, cottonseed has the same importance as sunflower seeds. Even the waste of oil factories is a valuable food for animals, and the work directed to the production of oil is one of the important conditions for the implementation of the food program [1].

Cotton variety, family, and oil production are the main determinants of growth. The difference in the moisture content of seeds of different families reaches 6-8%. The influence of agrotechnical activities, climatic conditions on oil accumulation is not very clear and does not exceed 1-3% [2].

Experimental evidence shows that cotton cultivars and ridges differ in seed mass, kernel yield, and oil content. The materials for the analysis were taken from the experience of the selection department of the Andijan scientific-experimental station. The samples were taken from the middle part of the cotton bush, from the first places of 3-4 sympodia according to the generally accepted guideridges for determining the technological quality of the fiber.

Due to the increased demand for oil, the oiridgess of the seed is taken into account when evaluating the varieties. Because cottonseed oil is used for food and technical purposes. The amount of oil in the seed varies from 18 to 29 percent, depending on the type and variety of cotton. According to some literary sources, the proportion of oil in the chemical composition of the seed compared to other substances, especially protein, has a positive effect on its seed quality.

Table 1. The moisture content of the seeds of the ridges involved in the experiment, % (Andijon ITS)

Template and ridges	Fat, percentage			Average over the years	The difference from the seed moisture content of the control variety , %
	2015	2016	2017		
Andijan -35	16,9	18,9	18,1	18,0	-
1- ridge	19,2	17,8	19,4	18,8	+0,8
3- ridge	18,9	19,4	19,9	19,4	+1,4

4- ridge	19,5	21,6	20,2	20,4	+2,5
6- ridge	18,7	20,1	20,6	19,8	+1,8
8- ridge	20,3	21,0	20,9	20,7	+2,8
11- ridge	19,7	18,6	17,8	18,7	+0,7
14- ridge	22,4	23,0	22,1	22,5	+4,5
15- ridge	19,3	20,6	20,0	20,0	+2,0
17- ridge	22,2	22,9	23,3	22,8	+4,8
30- ridge	22,3	22,4	22,5	22,4	+4,4
76- ridge	22,2	22,4	22,1	22,2	+4,2

These families are widely used by station breeders in creating varieties. The yield of kernel content of seeds of different families ranges from 54.5 to 63.0%. According to our data, a direct relationship between the nuclear output and the absolute mass was determined.

These ridges are also important for practical selection because they are characterized by high productivity. The difference in seeding fertility in other cotton families described in the table is insignificant and up to 18.1-19.8%.

According to the average three-year results of the years of research, when analyzing the moisture content of the seed taken from the ridges, the highest indicator was 22.8% in the seed taken from the 14th ridge, while the seed taken from the 17th ridge showed a moisture index of 21.8%. with. These two ridges, in turn, compared to the moisture content of the seed isolated from the control Andijan-35 variety, the 14th ridge seed is 4.5; The seed of the 17th ridge was found to be 3.8 percent capital. Other ridges involved in the experiment were also found to have a slightly higher level of fertility compared to the model variety.

Thus, the moisture in the seeds has nothing to do with the length of the fiber. A similar phenomenon was observed in the analysis of medium fiber and thin fiber families. These ridges with different lengths of fiber do not differ significantly in terms of moisture content, and in some cases, the seed of fine fiber cotton has low moisture values.

Table 2. Technological properties of new cotton sorghum seed oil and fiber.

Varieties and ranges	1000 seed weight, g	Oil content, (%)		Technological properties of fiber		
		In the nucleus	In the seed	The hardness of the fiber, g/k	Metric number	Fiber breaking length gk/tex
Andijan -35	120,0	31,20	18,45	4,8	5570	25,8
L-1	116,6	35,00	21,80	4,7	5750	27,3
L-3	116,8	35,15	22,70	4,5	5820	26,9
L-4	127,0	33,40	18,90	4,6	5810	25,8
L-6	130,0	34,20	19,00	4,6	5720	26,6
L-8	140,5	33,15	19,60	4,7	5780	26,0
L-11	123,2	32,36	18,20	4,8	5680	26,4
L-15	117,7	32,40	18,30	4,5	5770	25,9
L-17	139,8	32,60	20,00	4,4	5690	25,7

References

1. Дуйсинов Т. К., Сатторов Б.Х. “К вапросу масличности хлопчатника вида G.barbadse L. Ўзбекистон Республикаси қишлоқ хўжалигида сув ва ресуре тежовчи агротехнологиялар” мавзусидаги халқаро илаий-амалий конференция маърузалари асосидаги мақолалар тўплами. Тошкент, 2008 йил, 412-414 бетлар.
2. Рахмонқулов С., Рахмонқулов М., Тожибаева У., Абдурахмонова Ю. “Определение масличность семян органолептическом методом” Тезиси докладов Международной

научно-практической конференции “Теоритические и практические основы перспективы развития селекции и семеноводства хлопчатника”. Тошкент, 2002, 81-82 стр.

3. Sawan Z. M., Hafez S. A., Basyony A. E. Effect of phosphorus fertilization and foliar application of chelated zinc and calcium on seed, protein and oil yields and oil properties of cotton //The Journal of Agricultural Science. – 2001. – Т. 136. – №. 2. – С. 191-198.
4. Sawan Z. M., Hafez S. A., Basyony A. E. Effect of nitrogen fertilization and foliar application of plant growth retardants and zinc on cottonseed, protein and oil yields and oil properties of cotton //Journal of agronomy and crop Science. – 2001. – Т. 186. – №. 3. – С. 183-191.
5. Buttar G. S., Thind H. S., Aujla M. S. Methods of planting and irrigation at various levels of nitrogen affect the seed yield and water use efficiency in transplanted oilseed rape (Brassica napus L.) //Agricultural water management. – 2006. – Т. 85. – №. 3. – С. 253-260.
6. Ali O. A. M., Abdel-Aal M. S. M., Hussien M. A. M. Effect of Plant Distribution Patterns and Growth Regulators on Morphological, Yield and Technological Characters of Egyptian Cotton //Journal of Plant Production. – 2021. – Т. 12. – №. 8. – С. 847-860.