GALAXY INTERNATIONAL INTERDISCIPLINARY RESEARCH JOURNAL (GIIRJ)
ISSN (E): 2347-6915
Vol. 11, Issue 11, November (2023)

ANCIENT SOFT WHEAT NEW GRAINS QUALITY INDICATORS SOUTHERN AGRICULTURAL SCIENTIFIC RESEARCH INSTITUTE

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ABSTRACT

Selection of wheat genotypes that can accumulate the valuable iron contained in wheat grain more effectively, and to increase grain yield, as well as carrying out selection work aimed at improving its grain quality, baking properties and nutrition, is one of the most urgent tasks of today. In this article, the grain quality indicator of soft wheat varieties and the amount of iron in the grain are mentioned.

Keywords: Soft wheat, 1000 grain weight, protein content, iron content of grain.

QADIMIY YUMSHOQ BUG‘DOY NAVLARINING DON SIFAT KO‘RSATGICHLARI JANUBIY DEHQONCHILIK ILMIY TADQIQOT INSTITUTI

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ANNOTATSIYA

Bug‘doy doni tarkibidagi qimmatli bo‘lgan temirni yanada samarali to‘plashi mumkin bo‘lgan bug‘doy genotiplari tanlanib, don hosildorligi oshirilishi bilan bir qatorda uning don sifati, nonboblik xususiyatlari va to‘yimliligini yaxshilashga qaratilgan seleksiya ishlari olib borish hozirgi kunning eng dolzarb vazifalaridan biri hisoblanadi. Mazkur maqolada yumshoq bug‘doy navlarining don sifat ko‘rsatgichi hamda don tarkibidagi temir modda miqdori keltirib o‘tilgan.

Kalit so‘zlar: Yumshoq bug‘doy, 1000 dona don vazni, oqsil miqdori, don tarkibidagi temir moddasi.

АННОТАЦИЯ

Подбор генотипов пшеницы, способных более эффективно накапливать ценное железо, содержащееся в зерне пшеницы, и повышать урожайность зерна, а также проведение селекционной работы, направленной на улучшение качества ее зерна, хлебопекарных свойств и питательности, является одной из актуальнейших задач сегодня. В данной статье

упоминается показатель качества зерна сортов мягкой пшеницы и количество железа в зерне.

Ключевые слова: Мягкая пшеница, масса 1000 зерен, содержание белка, содержание железа в зерне.

Wheat grain contains 11-20% protein, 63-74% starch, about 2% oil, as much fiber and ash. Important indicators that determine the quality of wheat are the presence of protein and gluten in the grain, the amount of protein determines the scope of wheat application. For example, grain with 14-15% protein is needed for baking, and 17-18% protein for pasta. High-quality strong, valuable and hard wheat varieties have the greatest value. The basis of the classification of soft wheat according to flour strength (strong, medium and weak) is the quality of protein, gluten and gluten in the grain.

It is possible to ensure productivity in any unfavorable conditions by creating varieties that are resistant to biotic and abiotic stresses. In order to create a high-yielding wheat variety, researchers must develop resistance to biotic stresses. In most cases, high-yielding varieties become diseased after reaching production in the breeding process, and their yield decreases, that is, the resistant variety loses its immunity and becomes susceptible to the disease.

When choosing and identifying fertile varieties and samples of the wheat plant, it is necessary to pay attention to the following:

- To the number of productive stems on the plant.
- To the number of grains in the spike.
- To the number of spikes on the spike.

per 1000 grain weight [1].

When 24 varieties of wheat belonging to the countries of Central Asia and Transcaucasia were tested under the same conditions in the conditions of irrigated land at the Research Institute of Plant Science of Uzbekistan, the difference in yield between varieties was 32 ts (112-80 ts/ha) [2].

R. Siddikov (2004) stated that one of the main problems in the grain industry of the republic is to improve the quality of grain. In 2003, 0.2 percent of the wheat grain yield was class 2, 90.8 percent was class 3, 7.4 percent was class 4, and 1.8 percent was classless, and the grain gluten content was group 2 [3].

A. Amanov (2003) stated that there are 3 types of proteins in the gluten content of wheat grain: insoluble fibrin, partially soluble casein and gliadin. The amount and quality of gluten is an indicator of the technological and nutritional value of wheat grain and is determined by the IDK (gluten viscosity measurement) tool. If the IDK index is 0-15, the quality of gluten is group III very unsatisfactory, if it is 20-40, group II is satisfactory, if it is 45-75, group I is good, if it is 80-100, group II is satisfactory, and if it is 105-120, group III is unsatisfactory [4].

Based on the obtained results, it was determined that the moderation of relative air humidity has a positive effect on wheat productivity. In natural weather conditions, the increase in temperature and the decrease in relative air humidity lead to incomplete fertilization during flowering and have a negative effect on productivity. A decrease in the weight of 1000 grains is observed. It was observed that the weight of 1000 grains of ancient varieties was 30.5-35.2 g. It

was observed that Grecum variety was 35.2 g and showed higher result compared to other varieties. It was noted that the grain variety was up to 334.8 g, and the Surhak variety was 34.9 g.

The nature of the grain is one of the characteristics that indicate the completeness and size of the grain. If the wheat grain is empty or the grain groove is deep, the grain quality is low. Natura is among the indicators that express the mutual ratio of grain parts. Volumetric weight is an indicator of grain quality, the volume weight of high-quality wheat grain is more than 785 g/l, the volume weight of high-quality grain is 765-784 g/l, and the weight of low-quality grain is less than 725 g/l.

It was noted that the weight of grain in one liter of ancient varieties was 598.5-785.1 g/l. From this, the Red wheat (Boysuk) variety was 785.1 g/l, and it was calculated that it was a high quality wheat grain. Low grain weight was found in 16 varieties. The amount of protein and gluten contained in wheat grain depends on the conditions of its cultivation, applied agrotechnical methods, variety characteristics and other factors. Climatic conditions, planting from north to south and from west to east cause an increase in protein content of wheat varieties. Relative air humidity, sunlight, nitrogen content and agrotechnical activities also affect the amount of protein (Table 1).

1-Table. Grain quality parameters and iron content of ancient soft wheat varieties (Against 2023).

№	Nav nomi	1000 ta don vazni, gr	Don naturasi, gr/l	Oqsil miqdori, %	Kleykovina miqdori, %	IDK	Don shishasimonligi, %	Don tarkibidagi temir moddasi, mg
1	Qizil bug‘doy	32,4	633,6	17,3	28,3	86,4	73,8	1,1
2	Bukor bobo	33,8	745,1	16,5	26,8	88,2	80,5	0,8
3	Oq bug‘doy 1	32,4	700,2	17,4	27,4	95,3	55,9	1,3
4	Oq bug‘doy 2	31,8	704,9	17,1	28,3	97,1	77,1	0,4
5	Tuya tish	33,4	635,2	16,8	27,5	83,7	80,3	1,2
6	Surxak	34,9	701,3	17,5	26,3	84,2	82,3	1,0
7	Grekum	35,2	655,2	16,4	26,8	66,8	74,1	0,7
8	Kal bug‘doy	33,6	703,6	18,1	25,9	92,4	75,9	0,3
9	Qizil shark	30,5	688,5	17,3	26,9	100,6	83,4	1,3
10	Qora qiltiq	33,1	598,5	16,9	27,7	99,5	75,6	0,6
11	Qizil boshoq	34,2	623,3	16,8	28,5	80,6	86,2	1,1
12	Oq boshoq	33,7	725,1	16,4	27,3	94,3	71,9	0,6
13	Qayroq tosh	30,6	654,8	16,8	29,5	95,6	75,6	1,3
14	Qizil bug‘doy(Uzun)	32,2	655,5	16,4	26,4	92,8	74,1	0,7
15	Qizil bug‘doy(Boysuk)	33,9	785,1	17,4	26,4	88,1	75,9	0,6
16	G‘allakor	34,8	699,7	17,4	27,4	90,7	78,1	1,2
	Eng past ko‘rsatgich	**30,5**	**598,5**	**16,4**	**25,9**	**66,8**	**55,9**	**0,3**
	O‘rtacha ko‘rsatgich	**33,3**	**684,1**	**17,0**	**27,3**	**90,0**	**76,5**	**0,9**
	Eng yuqori ko‘rsatgich	**35,2**	**785,1**	**18,1**	**29,5**	**100,6**	**86,2**	**1,3**

The protein content of ancient wheat varieties was measured. According to the obtained results, it was observed that the protein content of wheat varieties was 16.4-18.1%. Of the varieties with high index, it was observed that Kal wheat 18.1%, Red wheat, White wheat 1, White wheat 2, Surkhak, Red wheat, Red wheat (Boysuk), Gallakor variety up to 17.4%.

Currently, breeders are faced with the task of creating new varieties of ancient varieties that meet the requirements of strong wheat with high grain quality indicators. During our research, we select wheat varieties with high grain quality indicators and study them by planting them in seedbeds. When determining the amount of gluten in ancient varieties, it was noted that it was 25.9-29.5%. In this case, it was observed that the Karaq stone variety showed a high result of 29.5%. It was observed that 28.3% of the red wheat, white wheat, and 28.5% of the red eared variety.

It was observed that the IDK indicator of wheat varieties was 66.8-100.6%. It was observed that 66.8% of the wheat varieties included in the 1st class (excellent) were Grecum. It was observed that 10 varieties belonging to the 2nd class (good) group were identified. There were no people belonging to the 3rd class (unsatisfied) group.

Glassiness, luster, or hardness, which determines the quality of the grain, is a characteristic of the wheat variety. However, these characteristics vary depending on the growing conditions of the wheat plant. The glossy quality of the grain decreases in conditions of excess moisture and lack of nitrogen. It is known that timely and sufficient feeding of the plant not only increases productivity, but also has a positive effect on the quality of grain.

It was observed that the vitreousness of grain was 55.9-86.2% in varieties. It was 86.2% in the red spike variety and showed a high result. It was observed that 80.5% of Bukor Bobo variety, 80.3% of Tuya Tish variety, 82.3% of Surhak variety, and 83.4% of Kyzyl Sharq variety had vitreousness.

The condition of iron deficiency in the body and the anemia caused by its extreme reduction weakens the human defense forces and causes susceptibility to various diseases. Iron content is 1.2 mg in wheat. In ancient wheat, it was observed that the iron content of the grain was 0.3-1.3 mg. It was observed that 1.3 mg was shown in White wheat, Red shark and Kairag tash varieties. It was noted that 1.2 mg was found in camel tooth, Gallakor varieties, and 1.2 mg in Red wheat, Red ear, and Gallakor varieties.

In conclusion, it should be noted that there is a negative correlative relationship between the productivity indicators of the amount of iron in grain, the weight of 1000 grains, r= -0.25, and the nature of grain, r= -0.27, while the indicators of grain quality, the amount of protein, r=0.003, It was found that there is almost no correlation with grain glassiness r=0.005. According to the results of the analysis, it was determined that the amount of iron in grain is positively correlated with the amount of gluten, the main indicator of grain quality, r=0.42.

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