

THE EFFECT OF THE COTTON-GRAIN ROTATION SYSTEM ON THE QUALITY OF AUTUMN SOFT WHEAT GRAINS

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Abstract: The article examines the influence of repeated and catch crops on the grain quality of winter soft wheat in a short crop rotation system. Also, the treatment of secondary and catch crops discussed in this article led to an increase in protein and gluten content and monoculture wheat cultivation led to a decrease during 2018-2020.

Key words: Corn-a system of exchanging grain, maize, maize, maize, grain, corn.

Introduction. In recent years, the yield of winter wheat on irrigated lands in the country has doubled, but the quality of grain has not increased, but decreased in some regions.

The efficiency of wheat cultivation depends not only on the gross yield, but also on quality indicators, which depend on the price of the product and its competitiveness in the market. Quality indicators of winter wheat grain are influenced by climatic conditions, soil fertility, applied agro-technological measures, biological characteristics of the variety. The above factors can be divided into two groups, the first is the factors that can not be affected (weather and climatic conditions during the growing season) and the second is the manageable factors (plant nutrition, protection from weeds, diseases, pests). At the same time, one of the key factors is to increase the grain yield and quality of winter wheat in the future by maintaining and increasing soil fertility. In the research of many scientists, it has been noted that the protein and gluten content of wheat grain increases with the improvement of soil fertility due to the cultivation of winter wheat after rotation and intermediate crops in crop rotation systems [3; 53-b., 2; 25-b., 1; 18-b].

In this regard, B.E. Izbosarov [2; 25-b] In his experiment in the conditions of the Jizzakh desert, he recommends planting moss, beans and soybeans as secondary crops after winter wheat in order to maintain and increase soil fertility and obtain high and quality grain yields from crops. Later A.Buriev [1; P. _ _ _ _] Based on the above, research has been conducted to improve the yield and quality of soft wheat in the system of crop rotation in the conditions of light gray soils of Kashkadarya region. It was found that secondary and intermediate crops grown in cotton-crop rotation systems had a positive effect on the quality of winter wheat grain (Table 1).

According to the data obtained in the first year of the study (2018), the protein content in the variants was 13.5-14%, gluten content was 26.4-27.4%, and there was no significant difference between the variants.

In the 2nd year of the experiment, i.e. in 2019, the highest protein content in the studied variants was 15.5% and gluten content was 28.7% in the perco-treated variant as a repeat crop mos and siderate. These values were found to be relatively high in the rye-treated variant with 14.9% protein and 28.4% gluten content in the re-cultivated moss and siderate.

In the third year of the experiment (2020y), it was found that the protein and gluten content was high in all variants that were repeated and siderate applied after cotton. Experimental control, that is, in the 3rd variant in which wheat is grown annually, the protein content was 12.4% and gluten 23.8%, in the variants with repeated and intermediate crops the protein content was 1.6-2.6% and gluten content. An improvement of 3.9-5.3% was achieved.

Table 1.

Impact of short crop rotation system on quality indicators of winter wheat grain, (2018-2020) .

	Options	Grain quality
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Experience in the system options number		Protein amount ,%	Gluten content ,%
2018			
3	Wheat ; wheat (control)	13.5	26.4
9	Cotton	14	27.4
10	Cotton	13.7	27.2
11	Cotton	13.7	27
12	Cotton	13.9	27.2
2019			
1	Wheat + cotton	13.5	25.8
3	Wheat ; wheat (control)	13	25.3
5	Wheat + mosh + perco; cotton	15.5	28.7
6	Wheat + mosh + rye; cotton	14.9	28.4
7	Wheat + corn + perco; cotton	14.7	28
8	Wheat + corn + rye; cotton	14.4	27.9
2020			
3	Wheat ; wheat (control)	12.4	23.8
8	Cotton ; wheat + mosh + perco; cotton	15	29.1
9	Cotton ; wheat + mosh + rye; cotton	14.6	28.2
10	Cotton ; wheat + corn + perco; cotton	14, 1	28
11	Cotton; wheat + corn + rye; cotton	14, 0	27.7

Perco as siderate, and post-cotton care variant 8 showed high results on these indicators, with a protein content of 2.6% and a gluten content of 5.6% higher than the control, e.g. wheat replanted mosh, rye as a siderate, and cotton after care in variant 9 found to be 2.2% and 4.4% higher, respectively.

In the positive change in grain quality indicators, intermediate crop perco and rye crops also showed improvement when corn was used as a secondary crop when plowed into the ground as a siderate. In particular, in the 10th variant of the experiment (cotton; wheat + corn + perco; cotton) and in the 7th variant (cotton; wheat + corn + corn + rye; cotton) control protein content was 1.6- compared to the 3rd variant (wheat + wheat). 1.7%, gluten content was found to be 4.2-3.9% higher.

Conclusion. In short, the decay of root and root residues left by repeated crops in the soil, the decomposition of siderate crops into the soil as a green manure, and the mineralization of their organic matter improved soil fertility and grain quality .

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