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**INFLUENCE OF AGROTECHNICAL MEASURES ON GRAIN QUALITY**

**INDICATORS WINTER WHEAT**

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**ANNOTATION**

This article presents an analysis of the obtained scientific data on the influence of winter wheat varieties Winter quarters and Gozgon in 2015-2017 in the conditions of soils of the steppe region of Kashkadarya region in the terms 01-05.10 and 15-20.10, irrigation modes 70-75-60% and 75-80-70% of the PPV and the norms of mineral fertilizers NPK 100:75:50; 180:120:90 and 250:175:125 kg/ha for protein, gluten, vitreous and grain nature.

**keywords:** Soil, climatic conditions, region, winter wheat, variety, sowing dates, fertilizing, irrigation, quality, grain, proteins, gluten, vitreous, grain nature.

The growing demand of the population of our country for grain and bakery products requires an increase in grain production and an increase in its quality.

Changes in the quality indicators of winter wheat grain largely depend on the applied agro technical factors, in particular on the timing and norms of sowing, irrigation regimes, norms of mineral fertilizers and many other factors. At the same time, there is a lot of debate among scientists about the effect of mineral fertilizers on the quality of winter wheat grain [1; 2; 3; 4 and 5]. Some scientists conclude that the use of high rates of mineral fertilizers in wheat cultivation reduces the quality of grain, others conclude that it increases. There are many opinions and conclusions about this. However, regardless of opinion, the quality of winter wheat grain depends on soil and climatic conditions, biological characteristics of the variety, the duration and quality of agro technical measures carried out, and even what periods of development and in what amount of mineral fertilizers of winter wheat are applied.

In the studies, it was found that the influence of sowing dates, the rate of application of mineral fertilizers and irrigation regimes on the quality of winter wheat grain carried out in the conditions of taker soils of the steppe region of Kashkadarya region,

According to the data obtained in the experiment conducted on the taker soils of the steppe region, among the varieties of winter wheat, the Gozgon variety has relatively high indicators of grain protein, gluten, virtuousness and nature.

At early sowing dates, the winter wheat variety was provided with a relatively high content of protein, gluten, vitreousness and grain nature. In the variety "Gozgon", in the variants when sowing 01-05.October, the protein content is 12.8-15.1%, gluten 25.6-29.1%, vitreous 59.2-76.0%, nature 599.3-763.8 g / l, and when sowing wheat in the period 15-20.October, these indicators are respectively 12.1-14.4%; 24.4-27.9%; 54.0-69.5% and 538.5-706.4 g/l.

According to the data obtained on the effect of irrigation regimes, with soil moisture of 75-80-70% of the PPV, it negatively affected all grain quality indicators, except for the nature of the grain. In variants 13; 14; 15 and 19; 20; 21 of the irrigation regime, 70-75-60% of the PPV protein content in grains was 13,2-14,6-15,1 and 12,4-14,0-14,4 % respectively, the gluten content 26,3-28,3-29,1 and 25,0-27,2-27,9 %, vitreous

**Table-1**

**The influence of sowing dates, irrigation regime and mineral fertilizer norms on the quality indicators of grain, (in the conditions of taker soils of the steppe region 2015-2016)**

| Var. №. | Winter wheat varieties | Sowing dates, dates | Irrigation modes, from PPV, % | Norms of mineral fertilizers, kg/ha | As part of the grain, % |         |         |         | Grain vitreousness, % |         | Grain types, g/lo |         |       |
|---------|------------------------|---------------------|-------------------------------|-------------------------------------|-------------------------|---------|---------|---------|-----------------------|---------|-------------------|---------|-------|
|         |                        |                     |                               |                                     | Squirrels               |         | Gluten  |         |                       |         |                   |         |       |
|         |                        |                     |                               |                                     | 2015 y.                 | 2016 y. | 2015 y. | 2016 y. | 2015 y.               | 2016 y. | 2015 y.           | 2016 y. |       |
| 1       | «Winter quarters»      | 01-05.10            | 70-75-60                      | N100P75K50                          | 12,9                    | 13,4    | 25,8    | 26,8    | 59,5                  | 61,9    | 584,0             | 607,0   |       |
| 2       |                        |                     |                               | N180P120K90                         | 14,4                    | 15,0    | 27,9    | 29,0    | 75,2                  | 78,1    | 725,8             | 754,2   |       |
| 3       |                        |                     |                               | N250P175K125                        | 14,8                    | 15,4    | 28,5    | 29,7    | 74,4                  | 77,4    | 717,6             | 746,7   |       |
| 4       |                        |                     | 75-80-70                      | N100P75K50                          | 12,2                    | 12,7    | 25,2    | 26,2    | 56,2                  | 58,5    | 617,5             | 642,0   |       |
| 5       |                        |                     |                               | N180P120K90                         | 14,2                    | 14,8    | 27,7    | 28,8    | 72,0                  | 74,9    | 750,4             | 780,0   |       |
| 6       |                        |                     |                               | N250P175K125                        | 14,0                    | 14,6    | 27,5    | 28,6    | 71,4                  | 74,2    | 745,6             | 774,9   |       |
| 7       |                        | 15-20.10            | 70-75-60                      | N100P75K50                          | 12,0                    | 12,5    | 24,3    | 25,3    | 53,3                  | 55,5    | 523,2             | 544,6   |       |
| 8       |                        |                     |                               | N180P120K90                         | 13,6                    | 14,1    | 26,6    | 27,7    | 68,5                  | 71,3    | 665,4             | 692,6   |       |
| 9       |                        |                     |                               | N250P175K125                        | 14,2                    | 14,8    | 27,1    | 28,2    | 67,9                  | 70,7    | 656,0             | 682,5   |       |
| 10      |                        |                     | 75-80-70                      | N100P75K50                          | 11,4                    | 11,9    | 23,8    | 24,8    | 51,0                  | 53,1    | 559,7             | 582,7   |       |
| 11      |                        |                     |                               | N180P120K90                         | 13,4                    | 14,0    | 26,5    | 27,6    | 66,3                  | 69,0    | 693,3             | 721,6   |       |
| 12      |                        |                     |                               | N250P175K125                        | 13,2                    | 13,7    | 26,2    | 27,3    | 65,8                  | 68,5    | 687,2             | 715,2   |       |
| 13      |                        | «Gozgon»            | 01-05.10                      | 70-75-60                            | N100P75K50              | 13,2    | 13,7    | 26,3    | 27,3                  | 60,5    | 63,0              | 599,3   | 623,7 |
| 14      |                        |                     |                               |                                     | N180P120K90             | 14,6    | 15,2    | 28,3    | 29,5                  | 76,0    | 79,1              | 745,3   | 775,1 |
| 15      |                        |                     |                               |                                     | N250P175K125            | 15,1    | 15,7    | 29,1    | 30,3                  | 75,2    | 78,1              | 738,2   | 767,4 |
| 16      |                        |                     |                               | 75-80-70                            | N100P75K50              | 12,8    | 13,4    | 25,6    | 26,7                  | 59,2    | 61,6              | 629,7   | 655,6 |
| 17      |                        |                     |                               |                                     | N180P120K90             | 14,4    | 14,9    | 28,2    | 29,4                  | 74,8    | 77,9              | 763,8   | 794,6 |
| 18      |                        |                     |                               |                                     | N250P175K125            | 14,2    | 14,8    | 27,9    | 29,0                  | 74,1    | 77,1              | 759,5   | 789,9 |
| 19      |                        |                     | 15-20.10                      | 70-75-60                            | N100P75K50              | 12,4    | 12,9    | 25,0    | 25,9                  | 55,1    | 57,3              | 538,5   | 559,5 |
| 20      |                        |                     |                               |                                     | N180P120K90             | 14,0    | 14,6    | 27,2    | 28,3                  | 70,0    | 72,8              | 679,0   | 705,8 |
| 21      |                        |                     |                               |                                     | N250P175K125            | 14,4    | 15,0    | 27,9    | 29,0                  | 69,5    | 72,2              | 672,7   | 699,0 |
| 22      |                        |                     |                               | 75-80-70                            | N100P75K50              | 12,1    | 12,6    | 24,4    | 25,4                  | 54,0    | 56,1              | 574,2   | 596,9 |
| 23      |                        |                     |                               |                                     | N180P120K90             | 13,9    | 14,5    | 27,1    | 28,2                  | 69,0    | 71,8              | 706,4   | 734,6 |
| 24      |                        |                     |                               |                                     | N250P175K125            | 13,8    | 14,4    | 26,7    | 27,7                  | 68,6    | 71,4              | 703,3   | 731,1 |

60,5-76,0-75,2 and 55.1-70.0 -69.5%, and in variants 16; 17; 18 and 22; 23, 24 at a humidity of 75-80-70% of the PPV, respectively, the protein content is 12,8-14,4-14,2 and 12,1-13,9-13,8 %, gluten 25,6-28,2-27,9 and 24.4-27.1-26.7%, vitreous grain 59,2-74,8-74,1 and 54,0-69,0-68,6 %.

Similar patterns were observed in the winter wheat variety. Full information is provided in table 1.

From the data obtained in this experiment, it can be concluded that in the conditions of the soils of the steppe region of the Kashkadarya region, when sowing winter wheat of the Gozgon variety in the period 01-05.October and applying fertilizers at the rate of NPK 250:175:125 kg/ha, irrigation regimes with soil moisture of 70-75-60% of the PPV are the greatest the protein content was 15.1%, gluten 29.1%, and the vitreous content of the grain was 76.0%. The best indicators of the nature of grain are obtained when applying NPK at a rate of 180:120:90 kg / ha and irrigation modes of 75-80-70% of the PPV.

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