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THE IMPORTANCE OF CREATING A NEW VARIETY OF SOFT SPRING WHEAT FOR NORTHERN KAZAKHSTAN

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The main crop among cereals both in the world and in Kazakhstan is wheat. Wheat as the most important food crop in world agriculture ranks first among other crops. Its area in Kazakhstan for 2019 amounted to 11,240 thousand hectares. Over 3/4 of the grain crops is spring wheat. The total sown area for wheat is 11.8 -13.3 million ha. The yield of 0.9-1.3 tons / ha allows you to get 11.2 -16.6 million tons of wheat. Of these, 7.4 -7.5 million tons are spent on domestic consumption, and 3.0- 8.2 million tons are exported. Carrying stocks are 1.0-3.0 million tons[1].

The choice of varieties is extremely important in obtaining high yields. Increasing the level of sustainable yields on quality by selecting new, more advanced wheat hybrids that differ in a complex of biological and economically valuable properties and qualities adapted to the conditions of the North Kazakhstan region.

Spring wheat is one of the main, most common grain food crops in our country. Since it contains a large number of proteins and resistance to climatic conditions of Northern Kazakhstan.

The protein spectrum in Kazakhstan wheat varieties Shortandinskaya 2012, Karaganda 31, Astana 2, Karaganda 22.

Gliadins were isolated from 10 seeds of each cultivar. Seeds were pre-crushed in a mill and then kept in 70% alcohol for 1 hour at a temperature of 37 ° C. Next, the precipitate was washed with alcohol 2 times and 70% organic acid and 3 M urea were added and incubated at 650 ° C for 1 hour. Further, the obtained samples were used for adding to PAG (12 µl.). Then, electrophoresis with samples was performed in 12% SDS page-SDS according to the method of U.K. Laemmli et al. (1970) [2] on the apparatus for vertical electrophoresis (Bio-Rad, USA).

The number of components of high molecular weight glutenins (HMG) among the studied varieties varies from 3 to 4. Only the second fraction of HMG in cultivar Astana 2 differs in molecular weight (79 kDa) from all other (85-92 kDa) samples. For example, the Karagandinskaya 22 and Karagandinskaya 31 varieties have the identical component composition of low molecular weight proteins - 16 components. The range of low molecular weight proteins varied slightly: Shortandinskaya 2012 - 8, Karagandinskaya 31 and Karagandinskaya 22 - 9 components, Astana 2 - 10 components.

In domestic breeding varieties, the spectrum of ω -gliadins in wheat varieties Astana 2 and Shortandinskaya 2012 are identical. Varieties Karaganda 31 and 22 are similar in γ -gliadin spectrum - 1 component, the region of β -gliadins is most

enriched in all samples and contains from 5 to 6 components. The α -gliadin region is similar between all varieties represented.

Thus, the studied wheat varieties are almost identical in protein spectrum, which is typical for closely related varieties or varieties of one selection group.

Reference

1.Klykov, A.G. Selection and seed production of grain crops / A.G. Klykov, V.Kh. Ryzhenko. - Ussuriysk: PSAA, 2005 .-168 p.

2.Laemmli U. K.. [Cleavage of structural proteins during the assembly of the head of bacteriophage T4](#) (англ.) // [Nature](#) : журнал. — [London, UK](#): [Nature Publishing Group](#), 1970. — Vol. 227, no. 5259. — P. 680—685.