

A collection of genes for high protein and gluten content in grain introgressed into bread wheat from relative species: intra-chromosomal localization, molecular markers and agronomic effects

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Protein and gluten content in wheat grain are the most important indicators in determining the grain class in accordance with Russian and international trade standards. They are also one of the most difficult to predict under genotype selection in breeding and in marketable grain production. This is because the genetic control of protein and gluten content is poorly understood and the number of donors for this trait are limited. The results of a long-term work will be presented on the transfer of introgressions from the five relative species from genus *Triticum* and *Aegilops* into the bread wheat chromosomes that carry genetic factors increasing the target traits. A collection of lines carrying the introgressions was created on the same genetic background of the Saratovskaya 29 variety. It makes it possible to compare their effects on both target and other agronomic traits. Introgressions are studied and marked with microsatellite markers within a particular chromosome. The lines were studied in terms of protein and gluten content and yield components both in greenhouse and field conditions. Financial support: Russian Science Foundation (23-26-10046) and Novosibirsk Region (p-59).

Take-home message:

The genes that increase protein and gluten content in grain were extracted from the bread wheat relative species *T. timopheevii*, *T. durum*, *Ae. speltoides*, *Ae. markgrafii* and *Ae. tauschii*. Molecular markers designate their intra-chromosomal positions.