

## Sources of high protein and gluten content in grain in some wheat species

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Despite the creation of a number of varieties of soft wheat combining high grain productivity and high grain quality, there are limits to increasing protein and gluten. The initial material plays a key role in the efficiency of selection for grain quality. Screening of the VIR wheat collection on the NIR analyzer, grown in the forest-steppe zone of the Republic of Tatarstan, revealed samples with the highest protein and gluten content. They can serve as a starting material for the selection of high-quality varieties of soft wheat. During three years (2016–2018) wheat samples including the following species were analyzed: *T. aestivum* L., *T. durum* Desf., *T. dicoccum* (Schrank) Schuebl., *T. polonicum* L. In high-protein samples *T. aestivum* L. protein content in grain ranged from 15 to 18.7 %, gluten in grain from 32.8 to 38.1 %. The maximum protein and gluten content was in varieties Long Fu 12 (K-65473, China), Long Fu 040671 (K-66200, China), Krasnoufimskaya 110 (K-65478, Russia, Sverdlovsk region), Ekaterina (K-65477, Russia, Sverdlovsk region), AC Tahoe (K-64977, Canada), Lillian (K-66203, Canada), Lovitt (K-66204, Canada), Molera (K-66033, Switzerland), Pamyati Maistrenko (K-65448, Russia, Omsk region), Polyushko (K-64856, Russia, Novosibirsk region), Manu (K-66029, Finland), Mayon 1 (K-65851, Syria). *T. durum* Desf. is widely used in hybridization with soft wheat and can be a source of high protein content. The maximum protein content was 16.4 % in the sample of Bezenchukskaya 182 (K-59890, Samara region), in other tested samples it did not exceed 15 %. Species *T. dicoccum* (Schrank) Schuebl, refers to high-protein, protein content in some samples reached 18.2 %, while the starch content is slightly lower than that of high-quality spring wheat. Protein content stand out K-7530 (Russia, Ulyanovsk region), K-10456 (Russia, Tatarstan), K-21961 (Germany). High protein content in *T. polonicum* L. – reached 17.8 %. The maximum protein and gluten content was in K-9277 (Israel) and Koko (K-62974, Syria).