



International Conference

FROM SEED TO PASTA III

A SUSTAINABLE DURUM WHEAT CHAIN
FOR FOOD SECURITY AND HEALTHY LIVES



Bologna - Italy, 19-21 September 2018

P.2.10

TETRAPLOID WILD SPECIES IN IMPROVEMENT BREAD AND DURUM WHEAT

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Rising interest in natural and organic products led to the reopening of ancient wheat as a source of grain for healthy nutrition. Several wheat species are used and further adapted to cultivation in industrial scale, e.g., *Khorasan*, *T.spelta*, *T.compactum*.

The most nutritionally favorable ratio of calcium to phosphorus is characteristic of species; *T.turgidum* (1:6,0); *T.persicum* (1:5,7); with the maximum of 1:19 (*T.compactum*.) and 1:16,0 (*T.spelta*).

By the ratio of calcium to magnesium, the most balanced are among tetraploids - *T.turgidum* and *T.persicum* (1:2.1).

Among the introgressive spring wheat samples the following samples with the maximum content have been selected: Kazakhstan 10 x *T.dicoccum* — for *K*, *P*, *Ca*, *Mg*; Kazakhstan 10 x *T.timopheevii* — for *N*, *S*, *Fe*, *Zn*, *Mg*, *Mn*; Kazakhstan early ripening x *T.timopheevii* — for *F*, *S*.

For tetraploid wheat, the protein content varied from 15.8% for *T.turgidum* to 23.6% for *T.militinae*. Level of 19.0% and higher was in the grain of *T.aephiopicum*; *T.dicoccoides*; *T.monococcum* and *T.persicum*. Among the hexaploid species, the maximum protein content is noted in the *T.kiharae*.

The protein content in the grain of various species was formed due to the predominance of different protein fractions: globulin in grain of *T.militinae*; due to gliadin in *T.dicoccoides*, *T.dicoccum* and *T.timopheevi*. Introgressive winter forms are characterized by mainly glutenin fraction content in grain from 30% for genotype (Bezostaya1 x *T.militinae*)x *T.militinae* to 34% for genotype ErythrospERMUM350x *T.kiharae*.

Two forms are characterized by equal amounts of glutelin and globulin or the prevalence of globulin fraction (29% and 28%): ErythrospERMUM350x *T.militinae* and Steklovidnaya24x *Ae.cylindrica* (28% and 26%).

Wild relatives were characterized by an amylose content in the range of: *T.timopheevi* (31,5%) > *T.dicoccoides*; *T.macha*; *T.persicum* > *T.spelta* > *T.militinae*, *T.spharacoccum* (26.4%).

In addition, transitional form is the most optimal approach for the evaluation and subsequent transfer of unique wheat genes for alleles from its wild relatives.