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IMPROVING WHEAT TRITICUM AESTIVUM L. BY INTERSPECIFIC AND INTERGENERIC HYBRIDIZATION WITH POACEAE FAMILY SPECIES

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The related species of the family Poaceae (Triticeae) are the source of unprecedented new genes that allow the extension of genetic variation of common wheat *Triticum aestivum* L. These species have similar homoeologous chromosomes and rDNA sequences very similar to *T. aestivum* L. [1-3]. This allows the introgression of alien genes and their incorporation into the genomes A, B and D of wheat, where they can function permanently in the wheat genetic systems. Many of them have already been transferred to the varieties of *T. aestivum* L. [4].

The experimental material consisted of 28 lines of winter wheat obtained using the interspecific and intergeneric hybridization of *T. aestivum* L. with alien species *T. durum* Desf., *T. timopheevii* Zhuk., *Lolium perenne* L. and *Aegilops speltoides* Taush. Among them, 15 lines were developed from the cross-combination with tetraploid species (AABB) *T. durum* Desf., 4 lines from the combination with other tetraploid species of different genome composition (AAGG) *T. timopheevii* Zhuk., 4 lines from cross with *L. perenne* L. and 5 lines were the double hybrids (three-generic) derived with two related species, *T. durum* Desf. (AABB) and *Ae. speltoides* Taush (BB).

The anther culture method was used for obtaining DH lines from these interspecific and intergeneric hybrids. In *in vitro* culture 124 green plants were regenerated. The method of cluster analysis grouped hybrids in terms of comprehensive general similarity of the studied traits.

1. Frederiksen et al. (1992) Hereditas 116, 15-19.

2. Sasanuma et al. (2008) Euphytica 127, 81-93.

3. Zhang et al. (2008) Plant Biol 10, 635-642.

4. Pilch et al. (2011) Biuletyn IHAR, 262: 3-24.