Allopolyploidization as a driving force of chromosome reorganization of *Triticum* species

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Allopolyploidization is one of the basic processes leading to an increase in genetic diversity and contributing to the domestication of plants. The genus *Triticum* is the most significant in terms of domesticated allopolyploid species. The study of the structural organization of the chromosomes of common wheat (BBAADD genome) and its progenitors was carried out by genetic and physical mapping, genotyping and sequencing of individual chromosomes.

It is shown that the integration of diploid species genomes in one nucleus is accompanied by deletions of repeated DNA sequences and chromosome loci, the transfer of mobile elements, translocations, and chromosome inversions.

The main direction in the reorganization of chromosomes A, B and D genomes during evolution and breeding were noted. The influence of chromosomal rearrangements on the manifestation of agricultural important traits is discussed.

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The main publications of authors on the subject of the abstract:

Salina, *E., Muterko, A., Kiseleva, A., Liu, Z., Korol, A. Dissection of Structural Reorganization of Wheat 5B Chromosome Associated With Interspecies Recombination Suppression // Frontiers in Plant Science, 2022, 13, 884632*

The International Wheat Genome Sequencing Consortium (IWGSC), <…>, 5BS BAC sequencing and assembly: Elena Salina et al. Shifting the limits in wheat research and breeding using a fully annotated reference genome //SCIENCE, 2018, Vol. 361, Issue 6403, eaar7191.

Take-home message:

Allopolyploidization of *Triticum* species is accompanied by deletions of repeated DNA sequences and chromosome loci, the transfer of mobile elements, translocations, and chromosome inversions.

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