

Synthetic amphiploids - a potential source of common wheat genetic diversity in economically valuable traits

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Synthetic amphiploids combine the genetic potential of several species, which can be used to expand the genetic diversity of wheat. Line 1102 was isolated from a population obtained by crossing a triticale (AAB-BRR) and a synthetic amphiploid (AADDSS). It was shown that her karyotype corresponds to hexaploid wheat (AABBDD). Breeding important characteristics of this line are short stem, spherical grains and high micronutrient, in particular, iron and zinc. To map the loci associated with plant height, grain shape, and microelement content, line 1102 was crossed with the common wheat cultivar Lutescens 85, which is contrasting according to these traits. Analysis of the F₂ population revealed three QTLs for grain shape *Qsp.icg-5A*, *Qsp.icg-3B* and *Qsp.icg-6B* on chromosomes 5A, 3B and 6B. The *Qht.icg-4A* locus associated with the plant height was mapped to chromosome 4AS. Loci on chromosomes 5A, 6B and 4A were described for the first time. Short-stemmed, micronutrient-rich lines with spherical grains, obtained from crossing 1102×Lutescens 85, will be used in breeding. Acknowledgment: The work was supported by the Kurchatov Genomic Center of the ICG SB RAS (Agreement No. 075-15-2019-1662).

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

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