

K. Kruppa, E. Türkösi, É. Szakács, A. Cseh És M. Molnár-Láng (June 2013.), Development and Identification of a 4HL.5DL Wheat/Barley Centric Fusion Using GISH, FISH and SSR Markers.

Abstract

The 4H(4D) wheat/barley substitution line was crossed with the ‘Chinese Spring’ *ph1b* mutant genotype in order to induce wheat-barley homoeologous recombinations. F₃ and F₄ seeds of the 4H(4D) × ‘Chinese Spring’ *ph1b* mutant cross were analysed using genomic *in situ* hybridization, and a Robertsonian translocation was detected in monosomic form. Disomic centric fusions were selected among the self-fertilized progenies. The presence of the long arm of 4H was confirmed with SSR markers. The long arm of the 5D wheat chromosome in the Robertsonian translocation was identified using fluorescent *in situ* hybridization with the help of three DNA probes: pSc119.2, Afa family and pTa71. The wheat/barley centric fusion was identified as a 4HL.5DL translocation. This line exhibited supernumerary spikelet character, but the number of seeds/plant did not increase. The 4HL.5DL centric fusion line is suitable genetic material to study the expression of genes located on 4HL in a wheat genetic background.

Keywords: *Triticum aestivum*, *Hordeum vulgare*, 4H(4D) substitution line, ‘Chinese Spring’ *ph1b* mutant, 4HL.5DL centric fusion