

HMW Glutenin Composition in Wheat Doubled Haploid Populations

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Abstract: The composition of HMW glutenin subunits analysed in five doubled haploid (DH) populations of common spring and winter wheat (Sandrine × Jasna – 20 lines, Melon × Nawra – 20 lines, Quattro × Lavett – 34 lines, Melon × Jasna – 20 lines and Rysa × Pegassos – 38 lines). DH lines were derived by crossing of F₁ wheat hybrids with maize and *in vitro* culture of immature embryos. Allelic variation of *Glu-1* loci was determined by using SDS-PAGE in 132 lines. The most interesting variants of HMW glutenin subunits in SDS-PAGE patterns was observed in two crosses: Quattro × Lavett and Melon × Nawra. For Quattro × Lavett the following glutenins was distinguished: six lines (17.6%) with 1/7+9/2+12 (Quattro type pattern), two lines (5.9%) with 2*/14+15/5+10 (Lavett type pattern), eight lines (23.5%) with 2*/7+9/5+10, one line (2.9%) with 2*/14+15/2+12, seven lines (20.6%) with 1/7+9/5+10, two (5.9%) lines with 2*/7+9/2+12, tree lines (8.8%) with 1/14+15/2+12 and five lines (14.7%) with 1/14+15/5+10. In Melon × Nawra population glutenin composition were as follows: one line (5%) with 1/7+9/2+12 (Melon type pattern), one line (5%) with null/7+8/5+10 (Nawra type pattern), one line (5%) with 1/7+9/5+10, seven lines (35%) with 1/7+8/5+10, four lines (20%) with null/7+9/5+10, two lines (10%) with null/7+9/2+12, two lines (10%) with 1/7+8/2+12 and one line (5%) with null/7+8/2+12. Observed segregation was not in agreement with the expected one. It can be explained by the influence of wheat genotype on the effectiveness of doubled haploid production.