

DRUŠTVO GENETIČARA SRBIJE  
SEKCIJA ZA OPLEMENJIVANJE ORGANIZAMA

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SERBIAN GENETIC SOCIETY  
SECTION OF THE BREEDING OF ORGANISMS

DRUŠTVO SELEKCIONERA I SEMENARA  
REPUBLIKE SRBIJE

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SERBIAN ASSOCIATION OF PLANT  
BREEDERS AND SEED PRODUCERS

# ZBORNİK APSTRAKATA

X SIMPOZIJUMA DRUŠTVA SELEKCIONERA I SEMENARA  
REPUBLIKE SRBIJE

i

VII SIMPOZIJUMA SEKCIJE ZA OPLEMENJIVANJE ORGANIZAMA  
DRUŠTVA GENETIČARA SRBIJE

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# BOOK OF ABSTRACTS

X SYMPOSIUM OF THE SERBIAN ASSOCIATION OF PLANT  
BREEDERS AND SEED PRODUCERS

AND

VII SYMPOSIUM OF THE SERBIAN GENETIC SOCIETY  
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## POLIMORFIZAM ALELA GLIJADINA I GLUTENINA KOD PŠENICE (*Triticum aestivum* L.)

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Glijadini i glutenini se deponuju u endospermu semena i imaju najveći udeo u sadržaju proteina semena. Cilj ovog rada je identifikacija polimorfizama genskih alela koji kodiraju glijadine i glutenine. U istraživanje je uključeno 10 sorti pšenice. Od svakog genotipa je korišćeno 30 semena za ekstrakciju glijadina sa 70% etanolom, a glutenina sa 10%  $\beta$ -merkptoetanolom. Glijadini su razdvojeni elektroforezom u rastvoru pufera (pH=3,1) na 8,33% poliakrilamidnom gelu, dok su glutenini razdvajani pomoću SDS-PAGE (pH-8,6) na 11,8% gelu. Elektroforegrami su korišćeni za određivanje alela *Gli-1* i *Gli-2*, kao i alela *Glu-1*. Identifikovano je pet alela (**a, b, c, f, m**) na *Gli-A1*, četiri alela (**b, g, e, l**) na *Gli-B1*, četiri alela (**a, b, g, k**) na *Gli-D1*, pet alela (**b, e, g, m, n**) na *Gli-A2*, šest alela (**b, c, d, g, k, o**) na *Gli-B2* i tri alela (**a, b, e, h, m**) na *Gli-D2* lokusu. Za podjedinice glutenina visoke molekularne mase (HMVGS) je identifikovano tri alela (**a, b, c**) na *Glu-A1*, sedam alela (**a, b, c, d, f, h, i**) na *Glu-B1* i tri alela (**a, c, d**) na *Glu-D1*. Identifikovani aleli na svakom *Gli-1*, *Gli-2* i *Glu-1* lokusu ukazuju na visok polimorfizam proteina glutena i genetičku divergentnost analiziranih genotipova pšenice.

**Ključne reči:** aleli, glijadini, glutenini, polimorfizam, pšenica.

## POLYMORPHISM OF GLIADIN AND GLUTENIN GENE ALLELES IN WHEAT (*Triticum aestivum* L.)

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Gliadin and glutenins are deposited in endosperm of seed and they have the highest share in the protein content of seeds. The aim of this study is identification of gene allele polymorphisms encoding gliadin and glutenins. Ten varieties of wheat were included in this study and 30 seeds from each genotype were used for the extraction of gliadin by 70% ethanol, and glutenins by 10%  $\beta$ -mercaptoethanol. The gliadins were separated by acid PAGE electrophoresis (pH=3.1) on 8.33% polyacrylamide gel, while glutenins were separated by SDS-PAGE (pH=8.6) on 11.8% gel. Electrophoregrams were used for determining *Gli-1* and *Gli-2* alleles as well for *Glu-1* allele. The five alleles (**a**, **b**, **c**, **f**, **m**) at the *Gli-A1*, four alleles (**b**, **g**, **e**, **l**) at the *Gli-B1*, four alleles (**a**, **b**, **g**, **k**) at the *Gli-D1*, five alleles (**b**, **e**, **g**, **m**, **n**) at the *Gli-A2*, six alleles (**b**, **c**, **d**, **g**, **k**, **o**) at the *Gli-B2* and five alleles (**a**, **b**, **e**, **h**, **m**) at the *Gli-D2* locus were identified. For high molecular weight glutenin subunits (HMWGS) the three alleles (**a**, **b**, **c**) at the *Glu-A1*, seven alleles (**a**, **b**, **c**, **d**, **f**, **h**, **i**) at the *Glu-B1* and three alleles (**a**, **c**, **d**) at the *Glu-D1* were identified. Identified alleles at each *Gli-1*, *Gli-2* and *Glu-1* loci indicate high polymorphisms of gluten proteins and genetic divergences of analyzed wheat genotypes.

**Key words:** allele, gliadin, glutenin, polymorphism, wheat