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[home](#) [page](#) [about us](#) [contact](#)

[us](#)

Table of Contents

IN PRESS

CJGPB 2014

CJGPB 2013

CJGPB 2012

CJGPB 2011

CJGPB 2010

CJGPB 2009

CJGPB 2008

CJGPB 2007

CJGPB 2006

CJGPB 2005

CJGPB 2004

CJGPB 2003

CJGPB 2002

CJGPB

Home

Editorial Board

For Authors

- **Authors
Declaration**
- **Instruction
to Authors**
- **Guide for
Authors**
- **Copyright
Statement**
- **Submission**

For Reviewers

- **Guide for
Reviewers**
- **Reviewers
Login**

Subscription

Czech J. Genet. Plant Breed.

**J., Capouchová I.,
Prohasková A.,
Papoušková L.:**

**Intra-varietal
polymorphism of
gliadins and glutenins
within wheat varieties
grown in the Czech
Republic and its
impact on grain quality**

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140-148

Using vertical electrophoresis, a set of 22 biotypes heterogeneous according to their gliadin alleles as well as their low-molecular-weight (LMW) and high-molecular-weight (HMW) glutenin subunits were identified in 10 winter wheat varieties registered in the Czech Republic. The effects of individual biotypes and their specific allelic

compositions on the grain quality parameters were investigated. Inter-varietal differences in particular quality parameters (Zeleny sedimentation, farinograph water absorption, several values of the solvent retention capacity test) were significantly greater than the differences detected among biotypes of each variety. Special attention was given to the LMW glutenin subunits and gliadin alleles and to mutual interactions responsible for significant differences in the tested grain parameters. The results revealed at least one case of significant differences in grain quality parameters among biotypes of eight heterogeneous wheat varieties. This work unambiguously indicates that the high prevalence of wheat biotype(s) with significantly poorer values in some grain parameters can also decrease the expected technological quality of the original wheat variety. In particular, multi-line wheat varieties carrying alleles *Glu-B1* (6+8) and *Glu-B1* (7+9) or *Glu-B3j* and *Glu-B3g* can indicate the possibility of some significant changes in grain quality parameters.

Keywords:

HMW- and LMW-glutenin subunits;

storage proteins; technological
parameters; wheat biotypes

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