

Author: [ADVANCED](#) | Volume Page
 Keyword: |



[TOP](#) > [Available Issues](#) > [Table of Contents](#) > Abstract

ONLINE ISSN : 1881-3984

PRINT ISSN : 1344-6606

Food Science and Technology Research

Vol. 8 (2002) , No. 2 pp.178-182



[\[PDF \(179K\)\]](#) [\[References\]](#)

Effect of High-Molecular-Weight Glutenin Subunits with Different Protein Contents on Bread-Making Quality

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(Received: December 10, 2001)

(Accepted: February 18, 2002)

The objective of this study was to evaluate the effects of high-molecular-weight glutenin subunits with different protein contents on the quality of flour. The flour properties of near isogenic lines (NILs), which were substituted with HMWG subunits at the *Glu-B1* or *Glu-D1* allele, were investigated with four levels of protein content. The effect of the addition of subunits 20 at the *Glu-B1* to subunits 5+10 at the *Glu-D1* allele on bread-making quality was poor. The strength of the dough was only slightly affected despite the increase in protein content. Subunits 2+12, subunits 4+12 and subunits 2.2+12 at *Glu-D1* allele had little effect on dough properties when various protein contents were used, compared with subunits 5+10. Subunits 2.2+12 had the most negative effect on the physical properties of the dough at the *Glu-D1* allele. These results clearly showed that each HMWG subunit affected the properties of the dough differently, according to the increase of protein content.

Keywords: [wheat](#), [high-molecular-weight glutenin](#), [protein content](#), [quality](#)



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Effect of High-Molecular-Weight Glutenin Subunits with Different Protein Contents on Bread-Making Quality Kanenori TAKATA, Hiroaki YAMAUCHI, Zenta NISHIO, Wakako FUNATSUKI and Tatsuo KUWABARA, *FSTR*. Vol. **8**, 178-182. (2002) .

doi:10.3136/fstr.8.178

JOI JST.JSTAGE/fstr/8.178

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