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ONLINE ISSN : 1880-7291

PRINT ISSN : 1344-7882

Journal of Applied Glycoscience

Vol. 54 (2007) , No. 1 pp.1-5

[\[PDF \(384K\)\]](#) [\[References\]](#)**Effects of Milling Ratio on Properties of Endosperm Starches and Rice Flours from Milled Japanese Rice Grains**Masaki Okuda¹⁾, Kazutaka Kobayashi²⁾, Tomio Itani²⁾, Isao Aramaki¹⁾ and Katsumi Hashizume¹⁾

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(Received July 18, 2006)

(Accepted October 20, 2006)

Flour and endosperm starch prepared from rice grains of three Japanese rice cultivars milled from 90 to 30% of their original weight were subjected to physicochemical/structural analysis in order to examine the relationship between milling ratio and physicochemical/starch structural properties. The peak viscosity of the rice flours was found to increase with decreasing milling ratio, while that of the purified starches did not change significantly. The gelatinization peak temperature of the rice flours was found to decrease while enthalpy changes increased with decreasing milling ratio. The gelatinization peak temperature of the purified starches was not found to change significantly with different milling ratios. Differences in structural properties of purified starches were examined by gel-filtration chromatography of isoamylase debranched starch. The FI (percentage of amylose) and FIIb/FIIa (ratio of short-to-long chain amylopectin) were found to be constant for all three cultivars for milling ratios ranging from brown rice to 30%.

Key words: milling, milled rice grain, pasting properties, gelatinization properties, starch structure

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To cite this article:

Masaki Okuda, Kazutaka Kobayashi, Tomio Itani, Isao Aramaki and Katsumi Hashizume:
Effects of Milling Ratio on Properties of Endosperm Starches and Rice Flours from Milled
Japanese Rice Grains . *J. Appl. Glycosci.*, **54**, 1-5 (2007) .

JOI JST.JSTAGE/jag/54.1

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