

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. 4 pp.323-327

[\[PDF \(147K\)\]](#) [\[References\]](#)

Disintegration Differences in Cooked Potatoes from Three Japanese Cultivars: Comparison of the Properties of Isolated Starch, Degree of Cell Separation with EDTA, and Contents of Calcium and Galacturonic Acid

[Chie MATSUURA-ENDO](#)¹⁾, [Akiko OHARA-TAKADA](#)¹⁾, [Hiroaki YAMAUCHI](#)¹⁾, [Yuji MUKASA](#)¹⁾, [Motoyuki MORI](#)¹⁾ and [Ken-ichi ISHIBASHI](#)²⁾

1) Department of Upland Agriculture, National Agricultural Research Center for Hokkaido Region

2) Department of Bioresource Chemistry, Obihiro University of Agriculture and Veterinary Medicine

(Received: January 15, 2002)

(Accepted: June 26, 2002)

Causes of the differences in degree of disintegration after cooking in three potato cultivars with the same starch content, Kita-akari, May Queen, and Hokkaikogane were sought by studying, properties of isolated starches, degree of cell separation in EDTA treatment, and amounts of calcium and galacturonic acid on tubers. The isolated starch of Hokkaikogane had the highest swelling power value and the highest phosphorus content, although this cultivar had the lowest degree of disintegration after cooking of the three cultivars. The degree of cell separation with EDTA, on the other hand, was higher in Kita-akari and lower in Hokkaikogane under conditions without starch swelling. Hokkaikogane had the highest calcium content in the NaCl-insoluble fraction, followed by May Queen and Kita-akari. Furthermore, Hokkaikogane had the highest content of galacturonic acid. These results suggest that factors related to the cohesion of the cells, such as the amounts of calcium and galacturonic acid, are more related to the degree of disintegration after cooking than the properties of the isolated starches in these cultivars.

Keywords: [cooked potato](#), [disintegration](#), [isolated starch](#), [cell separation](#), [calcium content](#), [galacturonic acid content](#)

To cite this article:

Disintegration Differences in Cooked Potatoes from Three Japanese Cultivars: Comparison of the Properties of Isolated Starch, Degree of Cell Separation with EDTA, and Contents of Calcium and Galacturonic Acid Chie MATSUURA-ENDO, Akiko OHARA-TAKADA, Hiroaki YAMAUCHI, Yuji MUKASA, Motoyuki MORI and Ken-ichi ISHIBASHI, *FSTR*. Vol. **8**, 323-327. (2002) .

doi:10.3136/fstr.8.323

JOI JST.JSTAGE/fstr/8.323

Copyright (c) 2007 by Japanese Society for Food Science and Technology

