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ONLINE ISSN : 1881-3984

PRINT ISSN : 1344-6606

Food Science and Technology Research

Vol. 10 (2004) , No. 3 pp.314-319

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Improving the Utility of Potato Pulp for Bread-Making by Fermentation with *Rhizopus oryzae*

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(Received: February 3, 2004)

(Accepted: April 14, 2004)

Potato pulp is an agricultural by-product of the starch industry. To use it for bread-making, experiments were conducted to evaluate the bread-making quality of doughs to which intact potato pulp (IPP) and potato pulp fermented by *Rhizopus oryzae* NBRC 4707 (FPP) had been added. The use of IPP significantly decreased the baking quality of wheat flour by degrading the dough's physical properties and lowering the gas retention of the dough. The bread-making quality of dough to which potato pulp that had been fermented for 2 days by *R. oryzae* had been added was significantly better than that of dough to which IPP had been added. In particular, the bread quality, such as specific loaf volume (SLV), aspect and crumb grain, except for staling and color, were good. Increase of the dough's gas retention and gassing power were the primary reasons for its improvement. They seemed to be related to the decomposition of starch and fiber in potato pulp and the moderate pH lowering of potato pulp by organic acid formed in the fermentation process by *R. oryzae*. These results suggested that the fermentation with *R. oryzae* was useful because it improved the utility of potato pulp for bread-making.

Keywords: [bread](#), [potato pulp](#), [bread-making quality](#), [fermentation](#), [Rhizopus](#)

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Improving the Utility of Potato Pulp for Bread-Making by Fermentation with *Rhizopus oryzae* Hiroaki YAMAUCHI, Takahiro NODA, Chie MATSUURA-ENDO, Shigenobu TAKIGAWA, Katsuichi SAITO, Yuji ODA, Wakako FUNATSUKI and Naoto HASHIMOTO, *FSTR*. Vol. **10**, 314-319. (2004) .

doi:10.3136/fstr.10.314

JOI JST.JSTAGE/fstr/10.314

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