

[Available Issues](#) | [Japanese](#)>> [Publisher Site](#)
 Author:  [ADVANCED](#) | Volume  Page   
 Keyword:   |   

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

ONLINE ISSN : 1881-3976

PRINT ISSN : 1341-7592

**Food Science and Technology International, Tokyo**

Vol. 2 (1996) , No. 2 pp.127-130

[\[PDF \(6993K\)\]](#) [\[References\]](#)

## Changes in $^{23}\text{Na}$ Nuclear Magnetic Resonance Signal, Water Activity and Saltiness of Miso during Fermentation

[Sayuki NIKKUNI<sup>1\)</sup>](#), [Takayuki KUROSAWA<sup>2\)</sup>](#) and [Nobuaki ISHIDA<sup>1\)</sup>](#)

1) National Food Research Institute, Ministry of Agriculture, Forestry and Fisheries

2) Asari-Sasuke Shoten Co.

(Received: December 6, 1995)

Changes in saltiness evaluated by sensory analysis,  $^{23}\text{Na}$  nuclear magnetic resonance (NMR) signal and water activity ( $a_w$ ) of miso during fermentation were investigated. The line width (full width at half maximum intensity) of the  $^{23}\text{Na}$  NMR signal of the miso extract increased with fermentation time, while the  $a_w$  and the saltiness decreased with fermentation time. The saltiness correlated with the line width ( $p < 0.001$ ) and the  $a_w$  ( $p < 0.001$ ). The line width was not much affected by NaCl concentration, but it increased on addition of glucose, casamino acid, ethanol and lactic acid. The line width of  $^{23}\text{Na}$  NMR and the  $a_w$  of the miso model solution consisting of sodium chloride and these substances were not much changed during storage over 100 days. This suggests that the increase in the line width and the decreases in the  $a_w$  and the saltiness of miso during fermentation were caused by the increase in water-soluble substances such as glutamic acid.

**Keywords:**  [\$^{23}\text{Na}\$  NMR signal](#), [water activity](#), [saltiness](#), [miso](#)
[\[PDF \(6993K\)\]](#) [\[References\]](#)
Download Meta of Article [\[Help\]](#)[RIS](#)[BibTeX](#)

To cite this article:

Sayuki NIKKUNI, Takayuki KUROSAWA and Nobuaki ISHIDA, **Changes in  $^{23}\text{Na}$  Nuclear Magnetic Resonance Signal, Water Activity and Saltiness of Miso during Fermentation** *FSTI*. Vol. 2, 127-130. (1996) .

---

doi:10.3136/fsti9596t9798.2.127

JOI JST.JSTAGE/fsti9596t9798/2.127

Copyright (c) 2009 by the Japanese Society for Food Science and Technology

---



---

[Japan Science and Technology Information Aggregator, Electronic](#)

