

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. 11 (2005) , No. 1 pp.115-121

[\[PDF \(854K\)\]](#) [\[References\]](#)

### Model for Aerobic Growth of *Bacillus Amyloliquefaciens* in Processed Soy Sauce under Various Conditions of Temperature, Initial Dry Cell Mass and Ethanol Concentration

[Yoshio MAKINO](#)<sup>1)</sup>

1) Graduate School of Agricultural and Life Sciences, The University of Tokyo

(Received: October 18, 2004)

(Accepted: January 22, 2005)

Construction of a predictive model for hygienic management of liquid foods was attempted by investigating the effects and interactions of storage conditions on the aerobic growth kinetics of *Bacillus amyloliquefaciens* in a soup product. The Gompertz curves were generated from the experimental data obtained under three temperatures (298 to 310K) in combination with four levels of inoculation ( $5.32 \times 10^{-3}$  to  $5.32 \times 10^{-6} \text{g} \cdot \text{L}^{-1}$ ) and five levels of ethanol concentration (2.7 to  $4.7 \text{g} \cdot \text{L}^{-1}$ ). The microbial growth kinetic analysis disclosed that ethanol was effective for prolonging lag phase duration of the growth in a processed soy sauce. The Gompertz function in combination with nonlinear equations generated by stepwise regression analysis was suitable for predicting the growth of organisms. The lag phase duration was about 18h longer than the quality guarantee period of a soup product containing a perceptible amount of contaminant organisms.

**Keywords:** [liquid seasoning](#), [genus \*Bacillus\*](#), [predictive microbiology](#), [spoilage](#), [Gompertz function](#), [multiple regression analysis](#)

[\[PDF \(854K\)\]](#) [\[References\]](#)

Download Meta of Article [\[Help\]](#)

[RIS](#)

[BibTeX](#)

To cite this article:

**Model for Aerobic Growth of *Bacillus Amyloliquefaciens* in Processed Soy Sauce under Various Conditions of Temperature, Initial Dry Cell Mass and Ethanol Concentration** Yoshio MAKINO, *FSTR*. Vol. **11**, 115-121. (2005) .

---

doi:10.3136/fstr.11.115

JOI JST.JSTAGE/fstr/11.115

*Copyright (c) 2006 by Japanese Society for Food Science and Technology*

---



---

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

