



Table of Contents

IN PRESS

CJFS 2014

CJFS 2013

CJFS 2012

CJFS 2011

CJFS 2010

CJFS 2009

CJFS 2008

CJFS 2007

CJFS 2006

CJFS 2005

CJFS 2004

CJFS 2003

CJFS 2002

CJFS 2001

CJFS Home

Editorial Board

For Authors

- **Authors
Declaration**
- **Instruction
to Authors**
- **Guide for
Authors**
- **Copyright
Statement**
- **Submission**

For Reviewers

- **Guide for
Reviewers**
- **Reviewers
Login**

Subscription

Czech J. Food Sci.

**Schlemmerová L.,
Houška M., Špelina V.,**

**Stronani J., Landfeldt
A., Šmuhařová H.,
Němcová I., Kýhos K.,
Průchová J., Novotná
P., Měřička P.:**

**Baroinactivation of
*Staphylococcus
epidermidis* –**

**mathematical model
and its verification
using human and cow
milk**

Czech J. Food Sci., 27 (2009): 118-126

Staphylococcus epidermidis, commonly found on the human skin, may contaminate human milk. High-pressure pasteurisation of human milk under normal temperature preserves the majority of its protective agents. The objective of this study was to acquire baroinactivation data and develop a model for model solutions of pH = 6.4 to

7.2 and water activity $a_w = 0.99$, in which baroinactivation of *Staphylococcus epidermidis* takes place. Decontamination data manifested exponential kinetics and the resulting model was described by the following equations: $D_p = D_{p, ref} \times 10^{(P_{ref} - P)/Z}$, $Z = -123.90 \text{ pH}^2 + 1635.54 \text{ pH} - 5210.49$; $D_{p, ref} = -8.89 \text{ pH}^2 + 121.02 \text{ pH} - 408.34$. The developed model was verified using pasteurised human milk and UHT-treated skimmed cow milk. The agreement between the experimental data and model-based prediction was very good for human milk. It was proved that the application of a pressure of 350 MPa for 10 min decreased the concentration of the working suspension of *S. epidermidis* in the model substrate by a minimum of five orders.

Keywords:

Staphylococcus epidermidis;
baroinactivation; human milk

[[fulltext](#)]

Sciences

XHTML1.1 VALID

CSS VALID