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[home](#) [page](#) [about us](#) [contact](#) 

us

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.

**Němečková I.,
Pechačová M., Roubal**

Problems with detection of proteolytic microorganisms and their undesirable activities in milk

Czech J. Food Sci., 27 (2009): 82-89

Occurrence of proteolytic enzymes in milk is often associated with technological problems and sensory, rheological and functional defects of final dairy products. Thus, the simple, cost-effective and available laboratory method for evaluation of undesirable proteolysis risk is needed. In our work we have tested cultivation plate methods and chemical methods (formol titration, ammonium reflectometric determination, the Kjeldahl method, the agar-well diffusion assay and spectrophotometry after cleavage of azo-casein) to choose the proper ones which can provide information on undesirable proteolytic changes especially in raw milk. Although the microbiological analyses cannot detect enzymes indigenous to

milk, but only the quantity of producers of microbial enzymes, they seem to be the most acceptable, particularly usage of the Glucose-Trypton-Yeast Extract agar with 10% vol. of sterile milk added before pouring onto plates (incubation at 30° C for 72 h). The chemical methods are not sensitive enough to analyse the real milk samples.

Keywords:

proteolysis; spoilage risk assessment; cultivation method; simple chemical methods; raw milk; dairy products; *Bacillus cereus*

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