



Agricultural Journals

Czech Journal of

FOOD SCIENCES

[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.

**Š áka E., Kruliš Z.,
Kotek J., Růžek L.,**

Korbarová A., Bubník Z., Růžková M.:

Application of wheat B-starch in biodegradable plastic materials

Czech J. Food Sci., 29 (2011): 232-242

Food application of wheat B-starch comprising small starch granules as a result of lower quality is problematic. Accordingly, B-starch or acetylated starch prepared from it, with the degree of substitution (DS) of 1.5– 2.3, was used in biodegradable films after blending with poly-(ϵ -caprolactone) (PCL). The following mechanical characteristics of the produced films were derived from the stress-strain curves: Young modulus, yield stress, stress-at-break, and strain-at-break. Water absorption of PCL/starch (60/40) films was determined according to European standard ISO 62. The measured data were compared with those of commercial A-starch. The films containing native starch degraded in

compost totally during 2 months. Acetylation of starch molecules in the composites reduced the degradation rate. Optical microscopy, in combination with the image analysis system NIS-Elements vs. 2.10 completed with an Extended Depth of Focus (EDF) module, was used to study the surface morphology of PCL/starch films after 20-day and 42-day compost incubation. Chemical changes in the compost used for the film exposition were measured.

Keywords:

biodegradable plastic; polycaprolactone; B-starch; wheat starch; image analysis; biodegradability

[[fulltext](#)]

© 2011 [Czech Academy of Agricultural Sciences](#)