



# Agricultural Journals

*Czech Journal of*

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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**

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### **Subscription**

# **Czech J. Food Sci.**

**Šimko P., Skláršová  
B., Šimon P., Belajová**

# **Effect of plastic packages on benzo[a]pyrene concentration in sunflower oil**

Czech J. Food Sci., 24 (2006): 143-148

Commercially available sunflower oil and the same oil distilled additionally in a molecular evaporator (to remove naturally occurring compounds) was spiked with benzo[a]pyrene (BaP) at the levels of 37.1 and 38.6  $\mu\text{g}/\text{kg}$ , respectively. Then, it was filled into polyethylene terephthalate (PET) and low density polyethylene (LDPE) receptacles of cylindrical shape, and BaP concentration was followed within 49 h. At the end of the experiments BaP concentration in the non-distilled oil packed into PET decreased to 25.9  $\mu\text{g}/\text{kg}$ , and BaP concentration in the distilled oil decreased to 34.6  $\mu\text{g}/\text{kg}$ . The rate and the extent of BaP removal were evaluated comparing the diffusion and equilibrium coefficients. The results showed that PET is able to reduce BaP concentration in sunflower oil due to BaP

sorption on the PET surface, but the rate and the extent of BaP removal are also affected by other compounds present in the oil. As found, LDPE is an inappropriate material for the BaP removal from sunflower and rapeseed