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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.**

**Karšulínová L.,  
Folprechtová B.,**

**Doležal M., Dostálová  
J., Velíšek J.:**  
**Analysis of the lipid  
fractions of coffee  
creamers, cream  
aerosols, and bouillon  
cubes for their health  
risk associated  
constituents**

Czech J. Food Sci., 25 (2007): 257-264

Fifteen coffee creamers, 10 cream aerosols, and 5 bouillon cubes from the retail market were analysed, principally for their contents of trans-fatty acids that are known to increase the risk of coronary heart disease, and for their contents of 3-chloropropane-1,2-diol (3-MCPD) fatty acid esters that possibly have a bioaccumulation potential. The contents of trans-fatty acids in coffee creamers, cream aerosols and bouillon cubes were in the range of 0.2– 32.8%, < LOD – 6.0%, and 0.5– 2.1% of total fatty acids, respectively. All samples contained high

levels of 3-MCPD fatty acid esters that were determined after releasing the free 3-MCPD by methanolysis. The 3-MCPD levels in coffee creamers, cream aerosols, and bouillon cubes were in the range of 130– 730 µg/kg (540– 4480 µg/kg fat), 50– 730 µg/kg (220– 2880 µg/kg fat), and 380– 670 µg/kg (2650– 4840 µg/kg fat), respectively. The results showed that the refined and hydrogenated oils may represent a certain risk. The highest levels of 3-MCPD esters were found in a sample of refined palm oil (4170 µg/kg). Currently, there is no information available on how these 3-MCPD esters are metabolised, to which extent they are hydrolysed or biosynthesised in the body, to which extent they are deposited in tissues, and how they influence the properties and functions of tissues (if they really do it).

**Keywords:**

coffee creamers; cream aerosols; bouillon cubes; fatty acids composition; trans-fatty acids; chloropropanols; 3-chloropropane-1,2-diol; 3-MCPD; 3-MCPD esters; contaminants

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