



# 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.**

**Šmidrkal J., Ilko V.,  
Filip V., Doležal M.,**

**Zemřiková Z., Kyselka  
J., Hrádková I., Velíšek  
J.:**

## **Formation of acylglycerol chloro derivatives in vegetable oils and mitigation strategy**

Czech J. Food Sci., 29 (2011): 448-456

The most important acylglycerol chloroderivatives identified in foods are 3-chloropropane-1,2-diol fatty acid esters (3-CPD esters) that are accompanied by epoxypropanol fatty acid esters formed in processed foods and, particularly, during the deodorisation of vegetable oils. Their content in refined vegetable oils is influenced by the oil composition, refining process conditions and process conditions of hydrogenation. Described and discussed here are the main pathways that lead to the formation of acylglycerols chloroderivatives and epoxypropanol fatty acid esters. The

article offers detailed explanation of the reaction mechanisms using the well-known chemical principals based on experimental data. The conditions suitable for removing the unwanted products from the refined vegetable oils were studied in models containing variable proportions of agents (bicarbonates or carbonates) causing the decomposition of 3-CPD fatty acid esters.

### **Keywords:**

3-chloropropane-1,2-diol; 3-CPD, 3-MCPD; 3-chloropropane-1,2-diol esters; bound 3-CPD; processing contaminants; mitigation strategy

[ [fulltext](#) ]

---

© 2011 **Czech Academy of Agricultural Sciences**

XHTML1.1 VALID

CSS VALID