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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.

**Vidrih R., Vidakovič S.,
Abramovič H.:**

Biochemical parameters and oxidative resistance to thermal treatment of refined and unrefined vegetable edible oils

Czech J. Food Sci., 28 (2010): 376-384

In human nutrition fats are physiologically important food constituents but also the components most liable to oxidative degradation. The oils included in the study were refined (sunflower, extra-sunflower, soybean, and rapeseed) as well as unrefined (olive and pumpkin-seed) oils. The aim of our study was to determine the fatty acid composition, tocopherol content, and quality parameters such as the free fatty acid content, peroxide value, and induction time. Extra virgin olive oil had the highest average peroxide value, while unrefined pumpkin seed oil had the lowest one. The acid value of the unrefined oils was higher on average than that of the refined oils. Soybean oil had the highest total

tocopherol content and extra virgin olive oil the lowest one. The refined oils with higher contents of saturated and monounsaturated fatty acids and lower polyunsaturated fatty acid contents had a high oxidative stability. A negative correlation has been found in the oils between the induction time and polyunsaturated fatty acid content. Among the oils investigated, unrefined pumpkin seed oil was the most oxidatively stable, the other oils following in the decreasing order: extra virgin olive > high oleic sunflower > rapeseed > soybean > sunflower oil. The oxidative stability of the unrefined oils was better than that of the refined oils.

Keywords:

vegetable oils; oxidative stability; tocopherols; fatty acid composition

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