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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.

Réblová Z.:

Effect of temperature

on the antioxidant activity of phenolic acids

Czech J. Food Sci., 30 (2012): 171-175

The effect of temperature on the antioxidant activity of phenolic acids (gallic, gentisic, protocatechuic, syringic, vanillic, ferulic, caffeic, and sinapic; 0.5 mmol/kg) was studied in pork lard, using an Oxipres apparatus, at a temperature range of 90° C to 150° C. The antioxidant activity of all studied compounds decreased with increasing working temperature, whereas a linear relationship ($P < 0.01$) existed between temperature and the antioxidant activity in all cases. However, the relative rate of the antioxidant activity decrease with increasing temperature (i.e. in comparison with the activity at 90° C) was not the same for all studied phenolic acids. Easily oxidisable phenolic acids (i.e. gallic, gentisic, protocatechuic, and caffeic) showed a slower decrease in antioxidant activity with increasing temperature (in comparison with their

ones (i.e. syringic, ferulic and sinapic acids, and especially vanillic acid). Consequently, only gallic, gentisic, protocatechuic, and caffeic acids showed a significant antioxidant activity at 150° C and vanillic acid was active only at 90° C.

Keywords:

antioxidants; pork lard; oxidasability; Oxipres

[[fulltext](#)]

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