



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.

**R. Vidrih, S. Filip, J.
Hribar:**

Content of Higher Fatty Acids in Green Vegetables

Czech J. Food Sci., 27 (2009): S125-S129

Green vegetables are considered an important source of some nutritionally important constituents that have health benefits (e.g. vitamins, minerals, antioxidants, fibre). Epidemiological data suggest that consuming a diet rich in fruit and vegetables can lower the risks for chronic diseases, such as cardiovascular diseases and cancer. Over the past 100– 150 years, there have been enormous increases in the consumption of omega-6 fatty acids due to the increased intake of vegetable oils from various seeds. Studies have indicated that a high intake of omega-6 fatty acids shifts the physiological state to one that is prothrombotic and pro-aggregatory, whereas omega-3 fatty acids have anti-inflammatory, antithrombotic, anti-arrhythmic, hypolipidemic and vasodilatory properties. Literature data regarding the contents of higher fatty

acids (e.g. omega-3 fatty acids) in vegetables are scarce, although vegetables are known to contain a high proportion of n-3 fatty acids. Here, the fatty acid content and composition was determined for 26 green vegetables that are commonly available in Slovenia, by gas-liquid chromatography and *in situ* transesterification. The fatty acid analysis revealed C16:0, C16:1, C18:0, C18:1, C18:2n-6 and C18:3n-3. The total fatty acid content in the vegetables ranged from 500 mg/100 g fresh weight (f.w.) in red cabbage, to 4.000 mg/100 g f.w. in tarragon. The proportion of saturated fatty acids (as g/100 g total fatty acids) ranged from 12% to 35%. All of the vegetables contained a high proportion of poly-unsaturated fatty acids (PUFAs), ranging from 45% to 81% of total fatty acids. The omega-3 PUFA proportion ranged from 5% in carrot to 60% in tarragon. The content of mono-unsaturated fatty acids ranged from 1% to 25%. French beans, tarragon and radish sprouts contained the highest concentrations of C16:1, at 5 mg/100 g f.w. Consumption of 100 g of tarragon meets 13.2% of daily requirements for α -linolenic acid; similarly, for radish sprouts 9.4%, for

mangold 6.9%, for rucicola 5.4%, for green salad 5.0%, and for kale 4.7%. Green vegetables are an important source of 18:3n-3 PUFAs, especially for vegetarian populations.

Keywords:

higher fatty acids; green vegetables; gas-liquid chromatography

[[fulltext](#)]

© 2011 [Czech Academy of Agricultural Sciences](#)

XHTML1.1 VALID

CSS VALID