

## Table of Contents

## In Press

## Online First

## Article Archive

[CJFS \(36\) 2018](#)
[CJFS \(35\) 2017](#)
[CJFS \(34\) 2016](#)
[CJFS \(33\) 2015](#)
[Issue No. 1 \(1-96\)](#)
[Issue No. 2 \(97-194\)](#)
[Issue No. 3 \(195-294\)](#)
[Issue No. 4 \(295-397\)](#)
[Issue No. 5 \(399-485\)](#)
[Issue No. 6 \(487-579\)](#)
[CJFS \(32\) 2014](#)
[CJFS \(31\) 2013](#)
[CJFS \(30\) 2012](#)
[CJFS \(29\) 2011](#)
[CJFS \(28\) 2010](#)
[CJFS \(27\) 2009](#)
[CJFS \(26\) 2008](#)
[CJFS \(25\) 2007](#)
[CJFS \(24\) 2006](#)
[CJFS \(23\) 2005](#)
[CJFS \(22\) 2004](#)
[CJFS \(21\) 2003](#)
[CJFS \(20\) 2002](#)
[CJFS \(19\) 2001](#)
[CJFS \(18\) 2000](#)
[CJFS \(17\) 1999](#)

## Editorial Board

## Ethical Standards

## For Authors

## Author Declaration

## Instruction for Authors

## Submission Templates

## Guide for Authors

## Copyright Statement

## Fees

## Submission/Login

## For Reviewers

## Reviewers Guide

## Reviewers Login

## Subscription

## Impact of freezing on flavonoids/radical-scavenging activity of two onion varieties

C. Pinho, M.T. Soares, I.F. Almeida, A.A.R.M. Aguiar, C. Mansilha, I.M.P.L.V.O. Ferreira

<https://doi.org/10.17221/704/2014-CJFS>

Citation: Pinho C., Soares M.T., Almeida I.F., Aguiar A.A.R.M., Mansilha C., Ferreira I.M.P.L.V.O. (2015): Impact of freezing on flavonoids/radical-scavenging activity of two onion varieties. Czech J. Food Sci., 33: 340-345.

[download PDF](#)

Flavonols, anthocyanins, and radical-scavenging activity of two Portuguese onion cultivars (Branca da Póvoa, white; and Vermelha da Póvoa, red) were evaluated simulating domestic freezing conditions (−18°C). Frozen portions of onions with different periods of domestic storage at ambient temperature presented increased flavonoid content when compared with the respective composition before freezing. No significant differences were observed on radical-scavenging activity. Domestic freezing of onion portions extended its shelf life. Thus, domestic freezing can be a good alternative to prevent the loss of unused fresh onions, preserving its antioxidant capacity, since frozen onions can be a useful natural antioxidant source.

**Keywords:**

*Allium cepa* L.; anthocyanins; flavonols; domestic storage; frozen onions

**References:**

Amaro L.F., Soares M.T., Pinho C., Almeida I.F., Pinho O., Ferreira I.M.P.L.V.O. (2013): Processing and Storage Effects on anthocyanin composition and antioxidant activity of jams produced with camarosa strawberry. International Journal of Food Science & Technology, 48: 2071–2077.

Antonia Murcia Ma, Jiménez Antonia Ma, Martínez-Tomé Magdalena (2009): Vegetables antioxidant losses during industrial processing and refrigerated storage. Food Research International, 42, 1046-1052 <https://doi.org/10.1016/j.foodres.2009.04.012>

Cisneros-Zevallos L. (2003): The Use of Controlled Postharvest Abiotic Stresses as a Tool for Enhancing the Nutraceutical Content and Adding-Value of Fresh Fruits and Vegetables. Journal of Food Science, 68, 1560-1565 <https://doi.org/10.1111/j.1365-2621.2003.tb12291.x>

Gennaro Laura, Leonardi Cherubino, Esposito Fabrizio, Salucci Monica, Maiani Giuseppe, Quaglia Giovanni, Fogliano Vincenzo (2002): Flavonoid and Carbohydrate Contents in Tropea Red Onions: Effects of Homelike Peeling and Storage. Journal of Agricultural and Food Chemistry, 50, 1904-1910 <https://doi.org/10.1021/jf011102r>

Lee Seung Un, Lee Jong Ha, Choi Suk Hyun, Lee Jin Shik, Ohnisi-Kameyama Mayumi, Kozukue Nobuyuki, Levin Carol E., Friedman Mendel (2008): Flavonoid Content in Fresh, Home-Processed, and Light-Exposed Onions and in Dehydrated Commercial Onion Products. Journal of Agricultural and Food Chemistry, 56, 8541-8548 <https://doi.org/10.1021/jf801009p>

Pérez-Gregorio Rosa María, García-Falcón Mercedes Sonia, Simal-Gándara Jesús, Rodrigues Ana Sofia, Almeida Domingos P.F. (2010): Identification and quantification of flavonoids in traditional cultivars of red and white onions at harvest. Journal of Food Composition and Analysis, 23, 592-598 <https://doi.org/10.1016/j.jfca.2009.08.013>

Pérez-Gregorio M.R., García-Falcón M.S., Simal-Gándara J. (2011a): Flavonoids changes in fresh-cut onions during storage in different packaging systems. Food Chemistry, 124: 652–658.

**Impact factor (Web of Sci Thomson Reuters)**

2017: **0.868**

5-Year Impact Factor: **1.**

**SJR (SCImago Journal R SCOPUS)**

2017: **0.355 – Q3** (Food Sci)

 Share

**New Issue Alert**

Join the journal on [Facebook](#)

**Similarity Check**

All the submitted manus checked by the [CrossRef Check](#).

**Abstracted / Indexed in**

*Agriindex of AGRIS/FAO da CAB Abstracts*

*Cambridge Scientific Abstra Chemical Abstracts*

*CNKI*

*Current Contents®/Agricul Biology and Environmental*

*Czech Agricultural and Food Bibliography*

*Dairy Science Abstracts*

*DOAJ (Directory of Open Ac Journals)*

*EBSCO – Academic Search I Elsevier's Bibliographic Dat FROSTI*

*FSTA (formerly Food Scienc Technology Abstracts)*

*Google Scholar*

*ISI Alerting Services®*

*ISI Web of Knowledge®*

*J-Gate*

*Science Citation Index Expa SCOPUS*

*TOXLINE PLUS*

*Web of Science®*

**Licence terms**

All content is made freely for non-commercial purp.

users are allowed to copy redistribute the material, transform, and build upo

material as long as they c source.

**Open Access Policy**

This journal provides imn open access to its conten.

principle that making res freely available to the pu.

supports a greater globa exchange of knowledge.

**Contact**

Ing. Kateřina Stárková  
Executive Editor

Pérez-Gregorio M.R., Regueiro J., González-Barreiro C., Rial-Otero R., Simal-Gándara J. (2011b): Changes in antioxidant flavonoids during freeze-drying of red onions and subsequent storage. *Food Control*, 22: 1108–1113.

phone: + 420 227 010 233

e-mail: [cjfs@cazv.cz](mailto:cjfs@cazv.cz)

**Address**

*Czech Journal of Food Sc*  
*Czech Academy of Agricul*  
*Sciences*  
Slezská 7, 120 00 Praha 2,  
Republic

Pérez-Gregorio M. R., Regueiro J., Simal-Gándara J., Rodrigues A. S., Almeida D. P. F. (): Increasing the Added-Value of Onions as a Source of Antioxidant Flavonoids: A Critical Review. *Critical Reviews in Food Science and Nutrition*, 54, 1050-1062  
<https://doi.org/10.1080/10408398.2011.624283>

Pinho Carina, Melo Armindo, Mansilha Catarina, Ferreira Isabel M. P. L. V. O. (2011): Optimization of Conditions for Anthocyanin Hydrolysis from Red Wine Using Response Surface Methodology (RSM). *Journal of Agricultural and Food Chemistry*, 59, 50-55  
<https://doi.org/10.1021/jf103839j>

Price K.R., Rhodes M.J.C. (1997a): Effect of storage and domestic processing on the content and composition of flavonol glucosides in onion (*Allium cepa*). *Journal of Agricultural and Food Chemistry*, 45: 938-942.

Price K.R., Rhodes M.J.C. (1997b): Analysis of the major flavonol glycosides present in four varieties of onion (*Allium cepa*) and changes in composition resulting from autolysis. *Journal of the Science of Food and Agriculture*, 74: 331–339.

Rodrigues Ana Sofia, Pérez-Gregorio María Rosa, García-Falcón Mercedes Sonia, Simal-Gándara Jesús, Almeida Domingos P.F. (2010): Effect of post-harvest practices on flavonoid content of red and white onion cultivars. *Food Control*, 21, 878-884  
<https://doi.org/10.1016/j.foodcont.2009.12.003>

Sharma K, Assefa AD, Kim S, Ko EY, Park SW (): Change in chemical composition of onion (*Allium cepa* L. cv. Sunpower) during post-storage under ambient conditions. *New Zealand Journal of Crop and Horticultural Science*, 42, 87-98  
<https://doi.org/10.1080/01140671.2013.860039>

Sharma Kavita, Assefa Awraris D., Ko Eun Young, Lee Eul Tai, Park Se Won (2015): Quantitative analysis of flavonoids, sugars, phenylalanine and tryptophan in onion scales during storage under ambient conditions. *Journal of Food Science and Technology*, 52, 2157-2165 <https://doi.org/10.1007/s13197-013-1225-2>

[download PDF](#)