

BOOK OF ABSTRACTS

International conference on new knowledge on
chemical reactions during food processing and storage

CHEMICAL REACTIONS IN FOODS VII

November 14–16, 2012
Prague, Czech Republic

J. Pulkrabová, M. Tomaniová, V. Godulová, K. Cejpek and J. Hajšlová
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Edited by
Jana Pulkrabová, Monika Tomaniová, Vanda Godulová, Karel Cejpek and Jana Hajšlová

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chemical reactions during food processing and storage

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A-30

INFLUENCE OF VARIETY AND STORING OF CHICORY (*CICHORIUM INTYBUS* L.) ON THE CONTENT OF TOTAL PHENOLS, ANTIOXIDATIVE POTENTIAL AND FATTY ACIDS**Lovro Sinkovič^{1*}, Janez Hribar², Rajko Vidrih³**^{1,2,3} Biotehnična fakulteta, Ljubljana, Slovenia

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Chicory (*Cichorium intybus* L.) has a long history of herbal use and is especially of great value due to its tonic effects upon digestive tract. It is popular in Mediterranean countries and is mainly consumed during winter time. In the present study, some nutritionally important ingredients like the content of total polyphenols, fatty acids and antioxidative potential (AOP) in external and internal leaves of different varieties of chicory were investigated. We analyzed the red varieties Leonardo, Trevisio, Mesola, Verona, stained variety Castelfranco, sweet varieties Jupiter, Uranus, Mercurius and red headed variety Chioggia. Chicories have been stored at a temperature of 0.1–0.8°C and relative humidity between 90 and 95%. According to results, variety and leaves (external, internal) influenced significantly the content of total polyphenols and antioxidative potential, while storing influenced the antioxidative potential only. Outer leaves have significantly higher AOP and higher content of total polyphenols. Chicory contains from 100 to 700 mg/100 g total fatty acids. The highest ratio (60%) is represented by linolenic acid, followed by linoleic (30%), palmitic (15%) and oleic (1.5%).

Keywords: *Cichorium intybus* L., storing, total polyphenols, antioxidative potential, fatty acids

A-31

INFLUENCE OF GAMMA IRRADIATION ON TOTAL PHENOLIC AND RESVERATROL CONTENT OF GRAPES AND RAISINS**Amanda Santillo¹, Michel Mozeika Araújo², Gustavo Bernardes Fanaro³, Flávio Thihara Rodrigues⁴, Severino Matias de Alencar⁵, Anna Lucia Casañas Haasis Villavicencio⁶**^{1,2,3,4} Instituto de Pesquisas Energéticas e Nucleares (IPEN-CNEN/SP), São Paulo, Brazil⁵ Universidade de São Paulo, São Paulo, Brazil Instituto de Pesquisas Energéticas e Nucleares (IPEN-CNEN/SP), São Paulo, Brazil⁶ Instituto de Pesquisas Energéticas e Nucleares (IPEN-CNEN/SP), São Paulo, Brazil

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Grapes (*Vitis vinifera*) are among the fruits with the highest phenolic compounds content. Public interest on phenolic compounds is increasing due to their beneficial effects on human health, specially their antioxidant activity. Grapes are extremely susceptible to chilling injury, mechanical damage and microorganisms' presence. Treatment of food by specific ionizing radiations to improve microbiological safety and storability has been extensively applied. In this paper, gamma radiation influence on total phenolic compounds and resveratrol content of Benitaka cultivar grapes and raisin were studied in a radiation dose range of 0–3.0 kGy. Total phenolic compounds were determined by spectrophotometric method while resveratrol analysis was performed by GC–MS after derivatization. Benitaka grapes showed a decrease in total phenolic content with increasing radiation doses. On the other hand, raisin samples showed the same range of total phenolic content despite the radiation dose applied. Storage time had no negative effect in phenolic content both to Benitaka grapes and raisins. The total resveratrol content in analyzed grapes samples increased with increasing radiation doses. Raisin samples showed a negligible resveratrol change due to irradiation treatment.

Keywords: Grapes, raisins, phenolic compounds, resveratrol, irradiation**Acknowledgement:** CAPES, IPEN, CNPq