

FINAL PROGRAM

EUROFOODCHEM XVIII

OCTOBER 13-16, 2015
MADRID, SPAIN

UPCOMING CHALLENGES IN FOOD SCIENCE



www.eurofoodchemxviiiimadrid2015.com

Institute of Food Science, Technology
and Nutrition (ICTAN-CSIC)
European Association for Chemical
and Molecular Sciences (EuCheMS)

EuCheMS
European Chemical Sciences
Division of Food Chemistry

75 AÑOS
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS
CSIC

ictan

THURSDAY, October 15th

CHEMICAL CHANGES INDUCED BY PROCESSING AND STORAGE

AUDITORIUM

Chairs: Henryk Zielinski and Iosune Cantalejo

09:30-10:15

Plenary speaker:

Thomas Henle (Germany)

Food chemistry in the light of evolution: A Darwin-inspired view on glycation reactions in food and in vivo

10:15-10:30

Leenamajja Mäkilä (Finland)

*Influence of storage on phenolic compounds in blackcurrant (*Ribes nigrum*) juices*

10:30-11:00

COFFEE BREAK AND EXHIBITION

AUDITORIUM

11:00-11:15

Eduardo Puértolas (Spain)

Effect of high pressure homogenization on phytochemical components and physicochemical properties of tomato and kiwifruit purees

11:15-11:30

José Pinela (Portugal)

Improving fresh-cut watercress shelf-life: A study on the suitability of modified atmospheres and conventional packaging

11:30-11:45

Tolgahan Kocadağlı (Turkey)

Multiresponse kinetic modeling of 1,2-dicarbonyl compound formation in wheat flour-glucose model dough system under dry heating conditions

11:45-12:30

Keynote speaker:

Manuel Coimbra (Portugal)

Chemical changes induced by roast in polysaccharides-rich foods

12:30-14:00

LUNCH / SPONSOR EXHIBITION

HALL 1st FLOOR

IMPROVING FRESH-CUT WATERCRESS SHELF-LIFE: A STUDY ON THE SUITABILITY OF MODIFIED ATMOSPHERES AND CONVENTIONAL PACKAGING

José Pinela^{1,2}, João C.M. Barreira^{1,2}, Lillian Barros¹, M. Beatriz P.P. Oliveira², Ana Maria Carvalho¹, Isabel C.F.R. Ferreira¹

¹Mountain Research Centre (CIMO), ESA, Polytechnic Institute of Bragança, Portugal

²REQUIMTE/LAQV, Faculty of Pharmacy, University of Porto, Portugal

Presenting author: jpinela@ipb.pt

Keywords: watercress; conventional packaging; non-conventional MAP; quality parameters; shelf-life extension

Watercress (*Nasturtium officinale* R. Br.) is a nutrient rich perennial plant of the Brassicaceae family highly appreciated in the Mediterranean cuisine. It is eaten raw in salads, soups and other recipes and used in folk medicine due to its medicinal and therapeutic properties (1-3). Due to its reduced shelf-life, the effects induced by different packaging systems on physical, chemical and functional quality parameters were evaluated and compared in order to select the most efficient treatment for shelf-life extension. Wild samples were gathered in Bragança region (Northeast of Portugal), rinsed in tap water and a portion was immediately analyzed (control). The remaining fresh material was packed in conventional (air- and vacuum-packaging) and non-conventional (N₂- and Ar-enriched modified atmospheres (MAP)) systems, and stored at 4 °C for 7 days. After assessing the effect on individual parameters, a Linear Discriminant Analysis provided an overview about the suitability of the tested packaging system in maintaining the fresh-like properties of the control samples throughout the storage time. The complete individualization of the four packaging systems was observed, being the air-packaged samples those to present the most dissimilar profiles from the control, followed by the N₂-enriched MAP ones. In turn, Ar-enriched MAP was the best option to preserve the overall quality. Nevertheless, some of the observed changes were advantageous for the samples' functional properties. Thus, this study highlighted Ar-enriched MAP as the best option to preserve fresh-cut watercress during refrigerated storage. Further studies are necessary to evaluate the effects on physiological and sensorial parameters.

Acknowledgments:

PRODER - Project AROMAP, for financial support of the work, and FCT (Portugal) for financial support to CIMO (PEst-OE/AGR/UI0690/2014), REQUIMTE (PEst-C/EQB/LA0006/2014), J. Pinela (SFRH/BD/92994/2013), J.C.M. Barreira (SFRH/BPD/72802/2010) and L. Barros (research contract).

References:

- (1) Carvalho AM & Morales (2013) Ethnobotany in the New Europe: People, health and wild plant resources, pp. 147-171. Oxford, UK: Berghahn Books.
- (2) Pereira C et al. (2011) Nutritional composition and bioactive properties of commonly consumed wild greens: Potential sources for new trends in modern diets. *Food Res Int* 44, 2634-2640.
- (3) Sadeghi H et al. (2014) In vivo anti-inflammatory properties of aerial parts of *Nasturtium officinale*. *Pharm Biol* 52, 169-174.

EUROFOODCHEM XVIII

OCTOBER 13-16, 2015
MADRID, SPAIN

UPCOMING CHALLENGES IN FOOD SCIENCE

CERTIFICATE OF COMMUNICATION

I hereby certify that:

JOSÉ PINELA

has presented the ORAL communication entitled:

**IMPROVING FRESH-CUT WATERCRESS SHELF-LIFE: A STUDY ON THE
SUITABILITY OF MODIFIED ATMOSPHERES AND CONVENTIONAL
PACKAGING**

*José Pinela; João C.M. Barreira; Lillian Barros; M. Beatriz P.P.
Oliveira; Ana Maria Carvalho; Isabel C.F.R. Ferreira*

in the session:

CHEMICAL CHANGES INDUCED BY PROCESSING AND STORAGE

during the **EURO FOOD CHEM XVIII**,
celebrated in Madrid on October 13th-16th, 2015

Dr. Juana Frías
Chair

www.eurofoodchemXVIIIimadrid2015.com