



BOOK OF ABSTRACTS

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XX EUROFOODCHEM CONGRESS

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Congress organized under the auspices of the Food Chemistry Division of the European Chemical Society (FCD-EuChemS) and the Portuguese Chemical Society (SPQ).



Detailed Program

17th June

8:30-9:00 Registration

9:00-9:30 Opening Ceremony

Plenary session 1 – Chairperson: Marco Arlorio

9:30-10:10 **Livia Sarkadi** - "Peter Czedik-Eysenberg Lecture". The role of food chemistry in the development of food science. History and future challenge"

Room 1 – Functional Foods – Chairperson: Tanja Cirkovic Velickovic

10:15-10:30 Yan Wang - Prenylated flavonoids derived from *Flemingia philippinensis* display potent bacterial neuraminidase inhibition activities

10:30-10:45 Filipa Mandim - Influence of the harvest stage on the phenolic composition and bioactive properties of *Cynara cardunculus* L. var. *atilis* heads

10:45-11:00 Laura Mateo-Vivaracho - Study of functional properties of wild and cultivated edible mushroom powder

Room 2 – Food Safety – Chairperson: Vieno Piironen

10:15-10:30 Sonia Losada-Barreiro - The antioxidant efficiency in O/W emulsions can be controlled by modulating antioxidant interfacial concentrations

10:30-10:45 Maria S. Silva Lopes - Mycotoxin content of *Salicornia* L. in Portugal

10:45-11:00 Caroline Douny - Development of an analytical method for the simultaneous measurement of 10 biogenic amines in meat. Application to Beninese grilled pork samples.

Room 3 – Food Sustainability – Chairperson: Victor de Freitas

10:15-10:30 Rúbia Corrêa - Chemical composition and bioactivities of Juçara fruit bio-residues, a promising source of valuable molecules

10:30-10:45 Elisabete Coelho - Antimicrobial potential of essential oils from agro-industrial by-products as possible feed ingredients

10:45-11:00 Tassadit Benhammouche - Enhancing Proteins extraction from *Moringa Oleifera* leaves: From conventional methods to a fully integrate process

11:00-11:45 **Coffee break / posters session**

Room 1 – Functional Foods – Chairperson: José Baptista

11:45-12:00 Franks Kamgang Nzekoue - Development of a new functional dairy product enriched in phytosterols: the importance of food chemistry

12:0-12:15 Elisabete Gonçalves - Administration of *Castanea sativa* flowers extract in Wistar rats

12:15-12:30 Paulina Opyd- Comparative effects of dietary hempseeds and hempseed oil on liver functions and lipid metabolism in genetically obese rats

ORAL COMMUNICATIONS

Food Sustainability

Chemical composition and bioactivities of Juçara fruit bio-residues, a promising source of valuable molecules

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Euterpe edulis Martius, popularly known as Juçara, is a native tree of the Atlantic Rainforest found predominantly in the states of the southern and southeastern regions of Brazil. Juçara fruit is a globose berry that, when ripe, acquires a dark purple shade and sweet pleasant taste. The industrial production of Juçara fruit pulp generates solid residues (peel) which are usually discarded [1]. The aim of the present work was to perform an unprecedented in-depth study on the bioactive components profile of *E. edulis* fruit peel. The nutritional composition of this material was estimated and its hydroethanolic extract was characterized in terms of phenolic compounds, besides antioxidant and antibacterial potential. Finally, the hepatotoxicity of the extract was assessed. A total of nineteen phenolic compounds was identified in Juçara peel. Seventeen were non-anthocyanin molecules: two phenolic acids, namely caffeic acid and a ferulic acid derivative; four flavanoneols, corresponding to three dihydroquercetin (taxifolin) and one dihydrokaempferol (aromadendrin) glycoside derivatives; six flavones, assigned as apigenin C-glycoside derivatives; and five flavonols, among which quercetin-3-O-rutinoside, kaempferol-3-O-rutinoside, and isorhamnetin-3-O-rutinoside. The major components of the peel extract were the anthocyanins cyanidin-3-O-rutinoside and cyanidin-3-O-glucoside (5.32 and 6.23 mg/g of extract, respectively), which together accounted for more than 87% of the extract's total phenolic content, which corroborates literature data [2, 3]. Anthocyanins are amidst the main compounds related to the great free radical-scavenging capacity of Juçara fruit, whereas a significant positive correlation with its general antioxidant capacity was observed (Shultz et al., 2016). The herein studied fruit peel extract presented expressive values of antioxidant capacity, assessed by five distinct methods, namely (1) oxidative haemolysis inhibition assay (OxHLIA), (2) inhibition of the production of thiobarbituric acid reactive substances (TBARS); (3) reduction of the 2,2-diphenyl-1-picrylhydrazyl radical (DPPH); (4) reduction of the 2,2-azino-bis (3-ethylbenzothiazoline-6-sulphonate) cation (ABTS), and (5) reduction power of the ferric ion (FRAP). Furthermore, the results obtained for antioxidant activity were more expressive than the ones verified by other authors for Juçara residues [1]. The evaluated *E. edulis* extract showed no toxicity against a non-tumour liver primary culture PLP2, at the highest concentration assessed (400 µg/mL). The inhibitory activity displayed by the extract against both Gram-positive (*Enterococcus faecalis*, *Listeria monocytogenes*, and Methicillin-resistant *Staphylococcus aureus* - MRSA) and Gram-negative (*Escherichia coli*, *Klebsiella pneumonia*, *Morganella morganii*, and *Pseudomonas aeruginosa*) bacteria indicates the presence of an extensive spectrum of phytochemical constituents with antibiotic potential. Indeed, the extract was more effective than the antibiotic ampicillin against *M. morganii* and *P. aeruginosa*. Therefore, Juçara fruit residues could be used to produce high added-value food ingredients, both colorants and preservatives, following the circular bioeconomy concept and stimulating the Juçara production chain.

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