



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).





Porto, 17-19 June 2019

Scientific Program

17 th June	
8:30-9:00	Registration
9:00-9:30	Opening Ceremony
9:30-10:10	P1. Livia Sarkadi "Peter Czedik-Eysenberg Lecture". The role of food chemistry in the development of food science. History and future challenge"
10:15-11:00	Oral presentations Room 1 – Functional Foods Room 2 – Food Safety Room 3 – Food Sustainability
11:00-11:45	Coffee break / posters session
11:45-12:45	Oral presentations Room 1 – Functional Foods Room 2 – Food Safety Room 3 – Food Processing
12:45-13:15	K1. Nicoletta Pellegrini "Food design and low-calorie intake"
13:15-14:30	Lunch break
14:30-15:10	P2. Isabel Ferreira "Functionalizing food with natural bioactive ingredients"
15:15-16:30	Oral presentations Room 1 – Functional Foods Room 2 – Food Composition and Authenticity Room 3 – Food Sustainability
16:30-17:15	Coffee break and poster session
17:15-18:30	Oral presentations Room 1 – Functional Foods Room 2 – Food Composition and Authenticity Room 3 – Food Processing
18:30-19:00	K2. Lilia Ahrné "Customised dairy products by gentle processing"
19:30	Welcome reception

PLENARY SESSIONS
&
KEYNOTES

Functionalizing food with natural bioactive ingredients

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Natural sources such as plants and mushrooms have been extensively studied for their nutritional properties and are considered important components of a balanced diet. Beyond nutritional features, these matrices are also rich sources of bioactive molecules that exert valuable health benefits. Some of these compounds have proven their efficacy as antioxidant and antimicrobial agents, and others have also found application in food colouring processes, which makes them excellent food preservatives and colorants. From this point of view, the reformulation of foodstuff through the introduction of these bioactive extracts with different functionalities (bioactive, preservative, and colouring molecules), can be considered a functionalization strategy, allowing food properties improvement.

Several compounds extracted from plants and mushrooms were applied in food matrices. For instance, phenolic acids (e.g. rosmarinic acid), flavonoids (e.g. quercetin derivatives), and ellagitannins (e.g. sanguin H-10 and lambertianin) from mushrooms, wild strawberry, rosemary, mountain sandwort, and flowers of *silva brava* demonstrated bioactive properties when introduced in gelatin, yogurt, and cottage cheese [e.g. 1]. On the other hand, betalains (e.g. gomphrenin II, gomphrenin III, isogomphrenin II, and isogomphrenin III) and anthocyanins (e.g. cyanidin, delphinidin, and malvidin derivatives) obtained from purple globe amaranth, rose, dahlia, centaurea, strawberry-tree, roselle, and blueberry have proved bioactive and colouring properties when incorporated in ice-cream, yogurt, and waffles [e.g. 2]. Moreover, strawberry-tree, basil, lemon balm, sweet chestnut flowers, fennel, and German chamomile revealed to be great sources of preserving molecules with antioxidant and antimicrobial activity, such as flavonoids (e.g. catechin, and quercetin and luteolin derivatives), phenolic acids (e.g. rosmarinic, chicoric, lithospermic, caffeic, and caffeoylquinic acids), and hydrolysable tannins (e.g. trigalloyl-HHDP-glucoside), which were tested in loaf bread, cupcakes, yogurt, cheese, and cottage cheese [e.g. 3].

The results obtained allowed to conclude that natural extracts from plants and mushrooms can be used for food functionalization.

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References:

- [1] M.I. Dias et al., Journal of Functional Foods, 16 (2015), 243.
- [2] C.L. Roriz et al., LWT-Food Science Technology, 92 (2018), 101.
- [3] S. Takwa et al., LWT-Food Science Technology, 88 (2018), 47.