Book of Abstracts

January 21st 2022

Webinar

NOVEL FOOD

based on new ingredients, materials and processes

INRAE

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Talents d'une planète soutenable

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INSTITUTO POLITÉCNICO DE BRAGANÇA

CIMO Centro de Investigação de Montanha

Title

1st Novel Food Webinar: Novel foods based on new ingredients, materials and processes

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1° Novel Food Webinar: Novel foods based on new ingredients, materials and processes

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[4]Graphic design and Book of abstracts LaTeX Formatting

[5] Book of abstracts resume compilation

Congress Program

Event Schedule

Friday 21st January 2022

Topic 1

Alternative protein-rich fermented foods

9:30-9:50	**Pascal Bonnarme, Sylvie Dequin, Lillian Barros, Tiago Barbosa, Isabel Ferreira** Opening Session
9:50-10:30	**Luca Cocolin** (University of Torino, Italy) Food fermentation: ancient approach for sustainable future Plenary
10:30-10:45	**Sophie Landaud-Liautaud** (Université Paris-Saclay, France) How fermentation can improve the acceptability of new pea protein-based foods?
10:45-11:00	**Christèle Humblot** (IRD, UMR QualiSud, Montpellier, France) Role of lactic acid bacteria on the nutritional quality of cereal-based fermented foods
11:00-11:15	**A. Thierry** (Institut Agro, Rennes, France) Positive interactions between lactic acid bacteria: a Must-have to develop new fermented foods
11:15-11:30	**Anne Saint-Eve** (Université Paris-Saclay, France) Sensory and consumer insights for legume-based ingredients and fermented foods
11:30-11:40	Break
11:40-11:55	**Maurizio Cellura** (Università degli Studi di Palermo, Italy) Environmental sustainability in the food sector: the role of the Life Cycle Assessment
11:55-12:10	**Luísa Barreira** (University of Algarve, Faro, Portugal) Microalgae: Alternative protein-rich sources and more
12:10-12:25	**Isabel M.P.L.V.O. Ferreira** (University of Porto, Portugal) Reuse of brewing by-products to produce protein-rich ingredients for food industry
12:25-12:40	**Francesco Porcelli** (University of Bari, Italy) Arguments in alternative protein-rich foods source choice: are insects available?
12:40-14:30	Lunch

Event Schedule

Friday 21st January 2022

Topic 2
Bioactive Ingredients in Foods

14:30-15:10	**Daniel Granato** (University of Limerick, Ireland) Functional Food Design: From idea mining to human intervention studies Plenary
15:10-15:25	**Giulia Bianchi** (Council for Agricultural Research and Economics, Italy) Environmental and technological factors affecting bioactive compounds content in fruit and vegetables
15:25-15:40	**Miguel Prieto** (Universidade de Vigo, Spain) Importance of the optimization procedures for the extraction of bioactive ingredients and its applications at industrial level
15:40-15:55	**Laila Meija** (Rīga Stradiņš University, Latvia) The Power of Rye
15:55-16:10	**Michela Verni** (Università degli Studi di Bari, Italy) Repurposing brewers' spent grain: tailored bioprocessing to improve its antioxidant properties
16:10-16:20	Break
16:20-16:35	**Ksenija Ņikuļcova** (Rīga Stradiņš University, Latvia) Antioxidant and antiradical properties of pomegranate juice
16:35-16:50	**Ana Rita Silva** (Mountain Research Center, Portugal) Cytinus hypocistis and it's great bioactive potential: food and cosmetic application
16:50-17:05	**Francisca Rodrigues** (REQUIMTE, Portugal) Chestnut shells as new potential active ingredient: An exploratory approach employing eco-friendly techniques
17:05-17:20	**Thomas Skurk** (Technische Universität München, Germany) Fiber substitution in common foods and their impact in human metabolism
17:20-17:30	**Chairs of the webinar** Closing Session

Cytinus hypocistis (L.) L. and it's great bioactive potential

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Plant-derived compounds have been extensively investigated to find novel active compounds as templates to mitigate the relative void of combinatorial chemistry, offering the potential to discover innovative structures that can lead to effective agents for various purposes [1]. *Cytinus hypocistis* (L.) L. is a wild edible parasitic plant on numerous members of the Cistaceae family. Although its biological properties were potentially attributed to its hydrolysable tannin content, its chemical composition was largely unknown, and the active substances not yet identified [2,3]. Thus, to decipher its potential applications, this work aimed at studying the bioactive properties and chemical composition of *C. hypocistis*. The plant material was collected in Castro Daire, Portugal. After lyophilisation, four different hydroethanolic extracts (whole plant, nectar chamber of the flower, petals, and stalks) were prepared and used for further analysis. The proximate composition was evaluated by AOAC official procedures; free sugars were determined using HPLC-RI, while organic acids were determined using UPLC-DAD [4]. Phenolic compounds were analysed by HPLC-DAD/ESI-MS^n [4-6]. *C. hypocistis* extracts were tested for their antioxidant (OxHLIA and TBARS), antibacterial (MIC and MBC), anti-inflammatory (murine macrophage - RAW64.7), and wound healing (migration capacity of HaCaT cells) properties. Enzyme inhibitory properties for α-amylase, SARS-CoV-2 chymotrypsin-like protease, and tyrosinase were also evaluated. *C. hypocistis* study unveiled its nectar as a balanced source of nutrients. A correlation between its hydrolysable tannin content and bioactive properties was also established. Extracts exhibited broad-spectrum antibacterial activity and good anti-inflammatory, antioxidant, and wound healing properties, together with the capacity to inhibit tyrosinase, α-amylase, and SARS-CoV-2 chymotrypsin-like protease. These results are significant evidence of the versatile profile of this plant. For bioactivity validation and mechanism investigation, further studies on fractionation, isolation, and compound characterisation are required.

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