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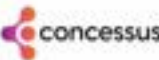
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Title

International Conference on Sustainable Foods - Achieving the Sustainable Development Goals

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ICSF CONFERENCE

European consumers have become more attracted to food formulations with sustainable ingredients, as they are perceived as products of fine organoleptic properties with additional health promoting benefits. Moreover, it is necessary to maintain an effort to secure the 2030 target for all the UN Sustainable Development Goals, via both innovation efforts and dissemination of knowledge. Hence, a lot of R&D&I work has been done into a food value chain with innovative processes and new formulations that focus on the use of sustainable ingredients.

The International Conference on Sustainable Foods – Achieving the Sustainable Development Goals (ICSF) that takes place in Bragança, Portugal, aims to disseminate knowledge regarding innovative processes and the development of sustainable food products. It brings together researchers, industry professionals, and consumers to share innovative ideas in this field, and to present results from their work on this area with a special focus on the sustainable food innovation in the Mediterranean and the development of sustainable vegetable pulps formulations.

The **ICSF** also presents itself as an opportunity to disseminate the results of three key projects for the Mediterranean region: **PRIMA LocalNutLeg** and **Pulping**, and Interreg **Transcolab Plus**.

The **LocalNutLeg** project main goal is to empower local Mediterranean nuts and legumes with a legal registered trademark (Protected Designation of Origin (PDO), Protected Geographical Indication (PGI)) or autochthonous identity through the development of innovative plant-based added-value food products tied to recover the attractiveness of the Mediterranean diet. The project aims to identify local nut and legumes varieties linked to Mediterranean gastronomic cultures, providing alternative-protein and maximum amount of nutrients and bioactive compounds and adopting them in Mediterranean diets through their use in plant-based dairy analogues, potential plant-based flours for bakery and pasta and added-value traditional ready-to-eat meals.

The **PulpIng** project has 11 partners from 6 different countries and aims to stimulate and improve the sustainable valuation of pumpkin in African and European countries in an integrated and waste-free manner, using innovative processing and preservation technologies. The project is expected to generate an entire value chain, from nature to safe food products/ingredients, improving incomes, creating jobs, and promoting local economies in the Mediterranean region.

Transcolab Plus is the continuation of the successful TransCoLab project. As a follow-up, TransCoLab Plus project wants to seek solutions against the significant food waste generated in the cereal processing industries through the development of new by-products and new utilization processes. To meet this objective, the strengthened and dynamization of the already existing cross-border network is needed. It will result in the generation of new knowledge and development of innovative techniques based on sustainable practices. All of this, in turn, pursues having a positive impact in the economic sector and the population in the cooperation area.

The **ICSF** also includes the presentation of others international projects, represented by their respective coordinators, namely PRIMA Foundation Medacornet, Promedlife, Artisanefood,



Proximed, Trace-Rice, Inovfarmer.Med and Funtomp projects, and Horizon Europe Wasteless project. Submitted works were received, processed, divided into two main categories (Oral Communications and Posters), and later distributed according to the afore mentioned topics. In total, 6 oral communications and 56 Panel Communications was presented, joined by 3 Keynotes and 2 Plenary lectures.

The organizing committee would like to address words of appreciation to all for attending our conference, and we hope to see you again in future research events.



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CHEMICAL CHARACTERIZATION AND BIOACTIVITY PROPERTIES OF CRITHMUM MARITIMUM L. GROWN UNDER DIFFERENT FERTILIZATION REGIMES

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One of the most widespread wild edible plants (WEP) in the Mediterranean area is *Crithmum maritimum* L. (sea fennel or rock samphire). Its aerial parts are used in cuisine and popular medicine for their aromatic, antiscorbutic, diuretic, digestive, and carminative properties [1,2]. Sea fennel has recently been recognized as a “cash crop” and “emerging crop” in saline agriculture due to its high potential for adapting to soil salinization, erosion, and short-term water drought [1,3]. Therefore, agricultural domestication studies are emerging to boost its consumption and valorization [2-4]. The present study aimed to characterize the nutritional profile (crude protein, total fat, total fiber dietary, ash) through AOAC methods and carbohydrates by difference. The chemical composition, in terms of fatty acids (GC-FID), tocopherols (HPLC-FL), free sugars (HPLC-RI) and phenolic compounds (HPLC-DAD/ESI-MSn) of 7 samples of sea fennel (fertilized with different proportions of nitrogen (N), phosphorus (P), and potassium(K)) was determined; as also the bioactive properties of its hydroethanolic extracts, namely antioxidant (TBARS), anti-inflammatory and cytotoxic activities. Aerial parts of sea fennel grown with intermediate amounts of N and P demonstrated higher fiber and ash contents and lower carbohydrate and crude protein contents. On the other hand, the lowest N:P:K ratios resulted in higher polyunsaturated fatty acids percentages. Only the α -tocopherol isoform was identified, while the detected sugars included fructose, glucose, sucrose and raffinose. More than 74% of the total amount of phenolic compounds were phenolic acids, mainly caffeoylquinic acid derivatives. The hydroethanolic extract of aerial parts cultivated with high amounts of N:P:K demonstrated the lowest concentration (122 ± 6 $\mu\text{g/mL}$) necessary to inhibit lipid peroxidation by 50% in TBARS antioxidant activity. The samples did not show activity at the maximum concentration tested (400 $\mu\text{g/mL}$) for anti-inflammatory and cytotoxic activities. In conclusion, our results demonstrate that customized fertilization enables the cultivation of sea fennel with enhanced content of potentially bioactive compounds.

Keywords: Sea fennel, Nutrient solution, Nutritional profile, Phenolic compounds, Antioxidant.

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