Natural products application: Health, Cosmetic and Food

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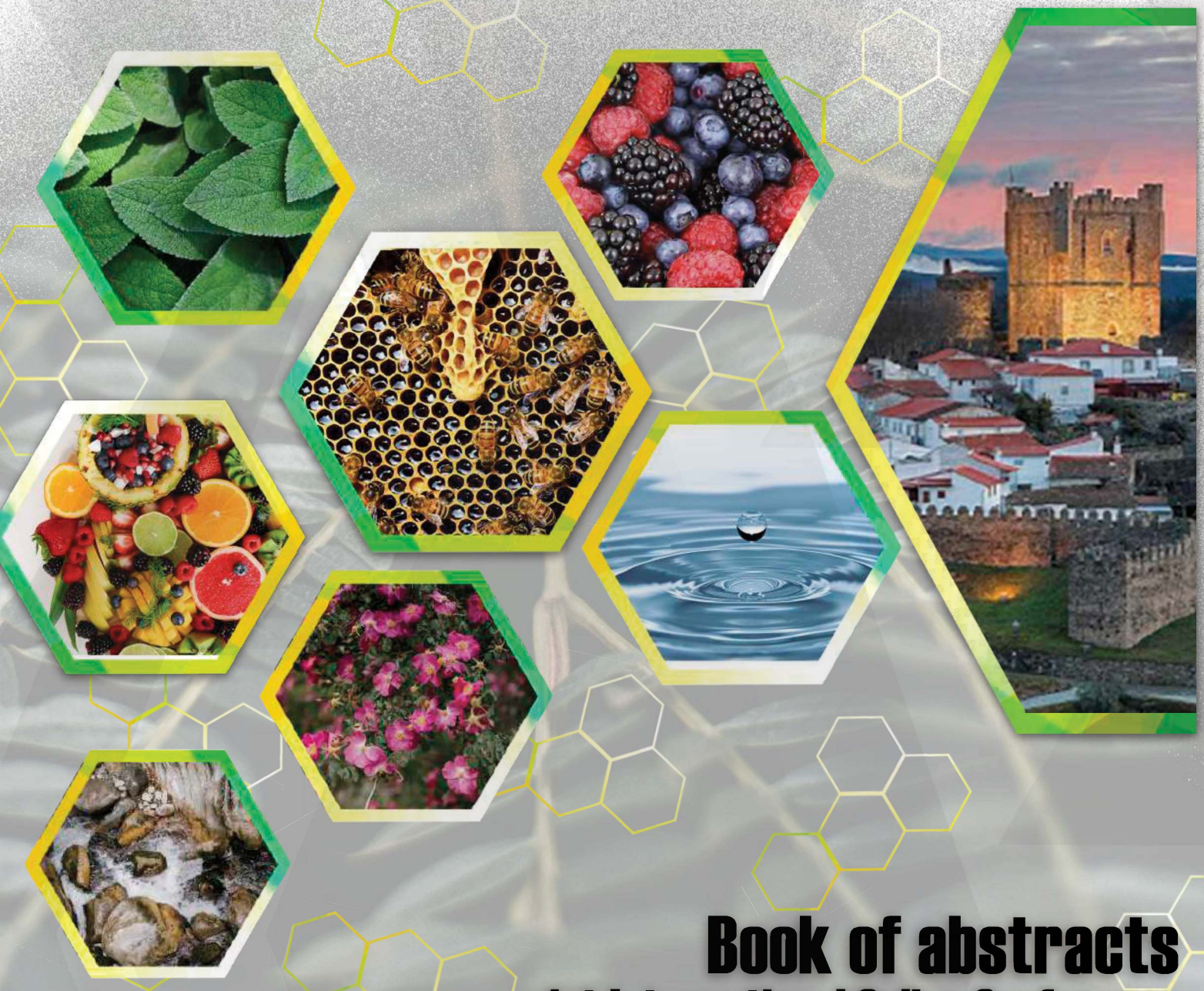

Book of abstracts

1st International Online Conference

4th - 5th February 2021

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CIMO Centro de Investigação de Montanha

montanhas de investigação

AQUA VALOR

Title

1st Natural products application: Health, Cosmetic and Food: book of abstracts

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1° Online Congress on Natural products application: Health, Cosmetic and Food

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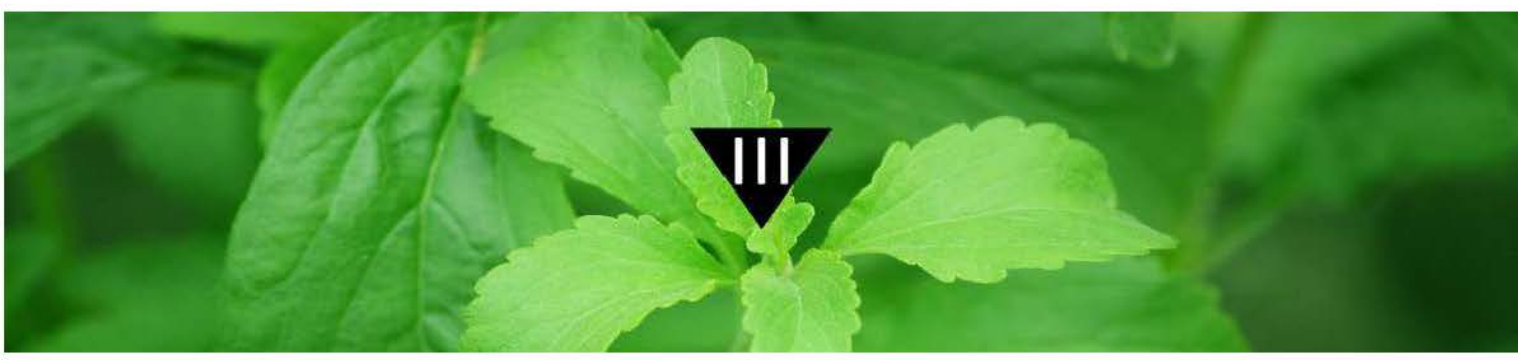

Morning - 5 February

Cosmetic

Oral Presentations (10:30 - 11:30)

Anna Szemik-Hojniak
Biomimetic short peptides in medicine and cosmetology

Celso Afonso Ferraz
Contributions towards the ecotoxicological evaluation of plant extracts and essential oils

Javier Echave Álvarez
Fatty acid comp., antioxidant and antibacterial act. of ethanolic PLE extracts of 4 macroalgaespecies from Galicia

Paula Plasencia
Bioactive properties of different extracts obtained from the aerial parts of blueberry and raspberry raw materials

Sara Gonçalves
Evaluation of cosmetic properties of natural ingredients in the Trás-os-montes area: a PhD project

Silena Silva Delgado Alves
Humulus lupulus l.: cosmetic application of extracts obtained from cones and vegetative parts

Pitch Presentations (11:40 - 12:00)

Ana Costa
From garbage to glamour: assessing the organoleptic prop. of formulations containing lycopene-enriched extracts from tomato waste

Ana Rita Silva
Optimization of a tannin-rich extract using response surface methodology

Bruno Melgar Castañeda
Time dependency on bioactive compounds UAE extractions

Diana Andreia Tavares Pinto
Castanea sativa shells: from an undervalued agro-residue to a valuable raw material for cosmetic industry

Maria Aurora Soares da Silva
Bioactive properties of six macro-alga from the iberic peninsula sea

Patrycja Brudzyńska
Application of plant-derived colorants in cosmetic products

PCC-05

DEVELOPMENT OF A COSMETIC ANTI-AGING GEL FORMULATION WITH EXTRACTS OF SPONTANEOUS PLANTS AND CULTIVARS OF *HUMULUS LUPULUS* L.

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Hop (*Humulus lupulus* L.) is known worldwide as an essential flavor in the beer industry. Its major compounds have been demonstrated to be associated to health benefits, due to its antimicrobial, antioxidant, anti-inflammatory and anticancer activities [1]. This study intended to develop and to evaluate the stability of an anti-aging cosmetic gel by incorporation of different percentages of hydroalcoholic extracts obtained from cones (flowers) and vegetative parts (leaves) of hop spontaneous and of the Cascade and Polaris cultivars and essential oil of *Thymus zygis*. In addition, the phytochemical profile and antimicrobial activities determination of hop extracts and of essential oil of thymus were performed.

A methylcellulose gel formulation was used as base to develop the hop cosmetic product. Subsequently, several parameters were evaluated to address its physical-chemical stability. In addition to that, the phenolic profile of hop extracts was determined by UHPLC-DAD-ESI-MS^2[2] while the composition of thyme essential oil was done by GC and GC-MS. The ability to inhibit the microbial growth was performed by microdilution broth method and the diffusion in agar test. Contrary to hop extracts, thyme oil has shown to exert antibacterial and antifungal activities and thus, it was added to the formulation as preservative. Carvacrol, terpinen-4-ol and p-cimene, determined as major compounds in this oil, could be important contributors for these activities. The extracts obtained from hop cones were rich in phenolic compounds such as cohumulone, humulone and xanthohumol, which have been claimed as possessing anti-wrinkle effect [3]. Concerning stability of the formulations, no phase separation was observed in the centrifugation, mechanical vibration tests or the color tests. However, changes were observed in the UV-Visible spectra between 300nm to 350nm wavelengths, probably by presence of the phenolic compounds such as example xanthohumol, cohumulona, humulona and lupulona [3]. In texture by back extrusion, only the formulation with the extracts of the Polaris variety has high consistency and low viscosity. In the light test there was phase separation in the samples due to the occurrence of dehydration, to minimize this effect, it must be properly in a non-transparent packaging to protect from light. Overall, the incorporation of hydroalcoholic extracts of hop and essential oil of thyme in methylcellulose gel formulations, especially with Polaris variety with 2.5% hydroalcoholic extract of hop cones, allow to obtained a stable cosmetic with potential as anti aging take into account the chemical composition.

References

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[2] Afonso, A. F., Pereira, O. R., Neto, R. T., Silva, A. M., & Cardoso, S. M. Molecules, (2017) 1-14. [3] Lou, H., Zhang, F., Lu, L., Dingc, Y., & Hao, X. RSC Advances, (2020) 13223–13231.

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