Natural products application: Health, Cosmetic and Food

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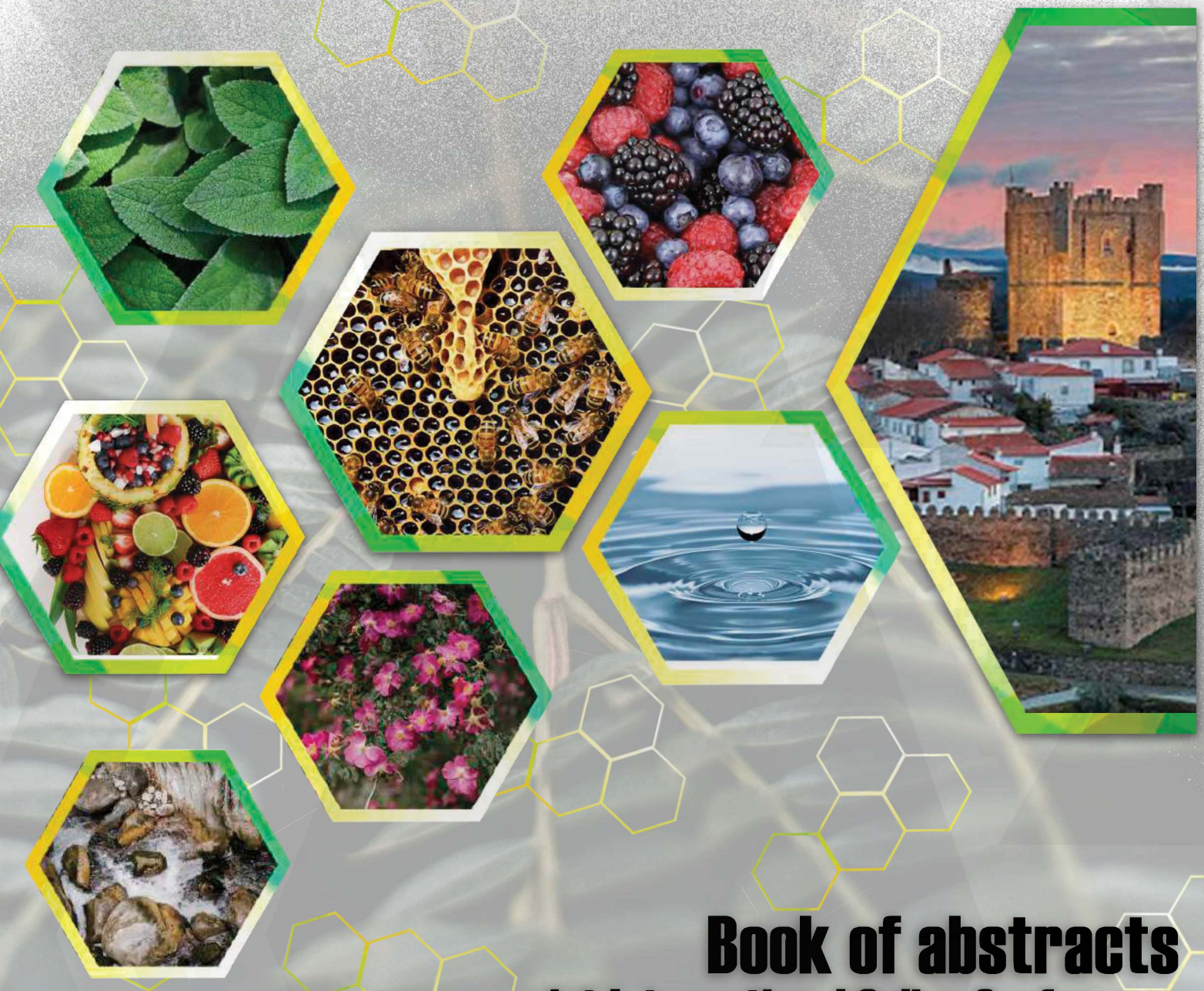

Book of abstracts

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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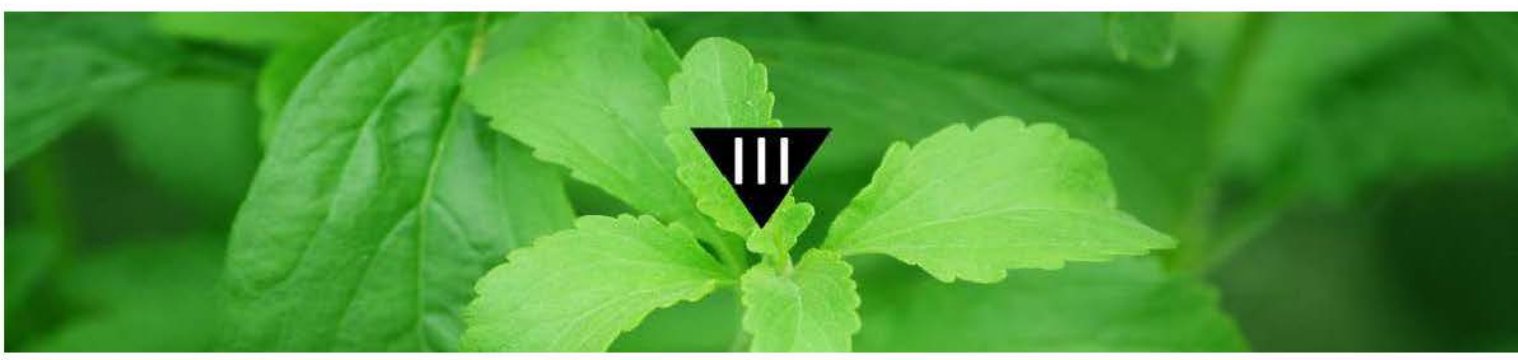

Morning - 5 February

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-24

UTILIZATION OF BEE PRODUCTS AND TRÁS-OS-MONTES AROMATIC PLANTS ON THE DEVELOPMENT OF COSMETIC FORMULATIONS

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The use of natural cosmetics is nowadays becoming increasingly frequent given to the notice of consumers to the consequences of using chemically synthesized compounds [1], which may even be carcinogenic. This work aimed to develop a cream formulation for daily moisturizing of the skin, with natural ingredients, like bee products, plants of the region of Trás-Os-Montes and vegetable oils. Among bee products, beeswax was chosen for its properties, like skin repairing power and antimicrobial power [2]. In more detail, two sage plants (*Salvia officinalis* and *Salvia elegans*) and the thyme species *Thymus zygis* subsp. *zygis* were used as sources of antioxidants. The phenolic profile of the hydroalcoholic extracts of sage were elucidated by UHPLC-DAD-ESI-MS^2 analysis [3], while the composition of the essential oil of *T. zygis* subsp. *zygis* was determined by GC/ GC-MS. The antimicrobial activities were evaluated by microdilution broth method and by diffusion agar test. The obtained formulations were subjected to physicochemical and microbiological stability tests.
The major phenolic components of *S. officinalis* extract were rosmarinic acid, apigenin-*O*-glucuronide, scutellarein-*O*-glucuronide and luteolin-7-*O*-glucuronide while *S. elegans* was mostly composed by rosmarinic acid, salvianolic acid K, luteolin-7-*O*-glucuronide and caffeic acid. The GC/ GC-MS analysis of essential oil of *T. zygis* subsp. *zygis* was mainly composed of carvacrol, cymene and trans-sabinene hydrate. The formulations had pH values slightly acid, similar to the skin pH. No phase separation or alteration of the organoleptic criteria of the formulations were observed. The stability of the products was also verified by spectrophotometer within the UV visible region between 210 and 600 nm, especially the sample containing olive oil and 5% of *S. elegans* hydroalcoholic extract. A non-Newtonien behavior, criterion sought in cosmetic creams, was also observed during the analysis by the texturometer. Additionally, the thyme volatile oil, used as a preservative in the cream, showed an inhibitory effect against *Staphylococcus aureus* (MIC and MBC < 0.031%), *Pseudomonas sp* (MIC and MBC = 1.25%), *Escherichia coli* (MIC and MBC = 0.31%) and *Candida albicans*. Above a degree of 0.31%, thyme oil showed in *C. albicans*, inhibition zones varying from 2 to 9.5 mm against *C. albicans*, in the agar diffusion test.
The promising results of these work allows propose beeswax, *S. officinalis*, *S. elegans* and *T. zygis* subsp. *zygis* as active ingredients for natural cosmetic formulations.

References

[1] Joshi, L.S., Pawar, H.A. Natural Products Chemisty & Research, (2015) 3(2).
[2] Ghanem, N. B. Research Journal of Biotechnology, (2011) 6 (4).
[3] Afonso, A. F., Pereira, O. R., Neto, R. T., Silva, A. M. S., & Cardoso, S. M. International Journal of Molecular Sciences, (2017) 18(1879).

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