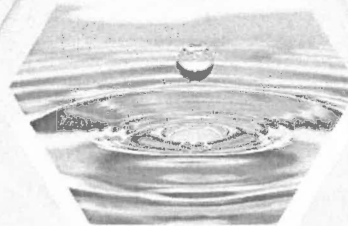
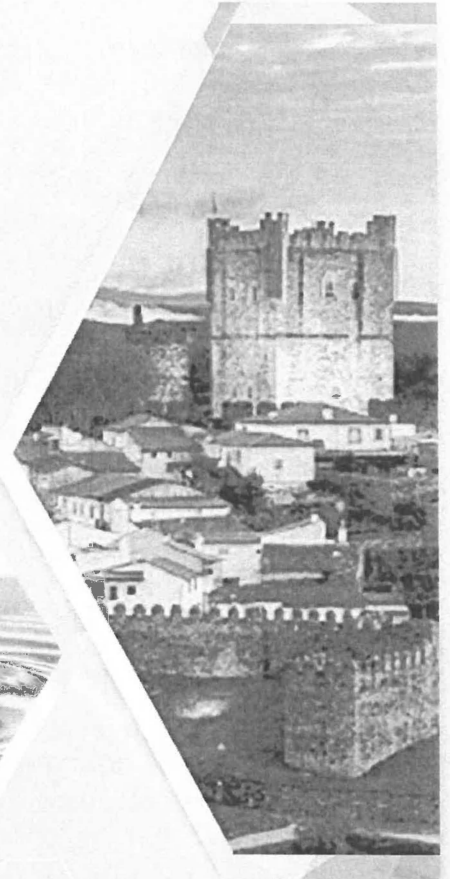
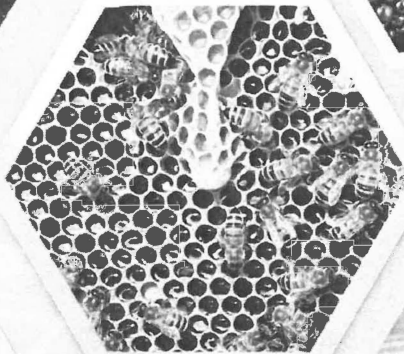
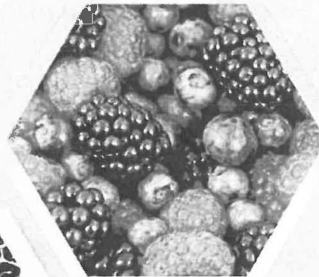
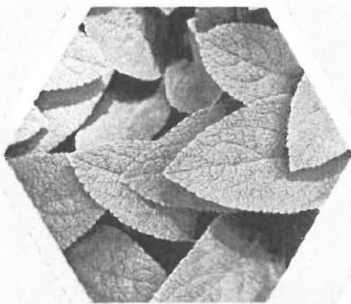


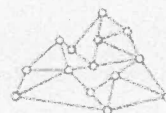


# Natural products application: Health, Cosmetic and Food

Provided by nature, adapted scientifically for industry



**Book of abstracts**  
**1st International Online Conference**  
**4th - 5th February 2021**



montanhas  
de investigação



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<sup>1</sup>Lillian Barros

<sup>1</sup>Bruno Melgar Castañeda

<sup>1</sup>Carlos Seiti Hurtado Shiraishi

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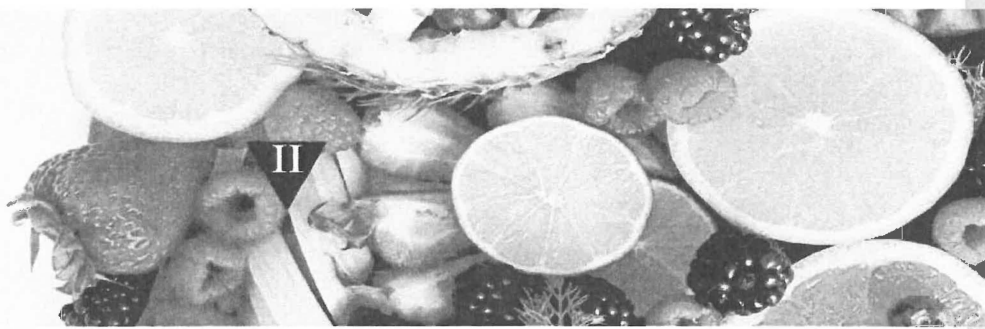
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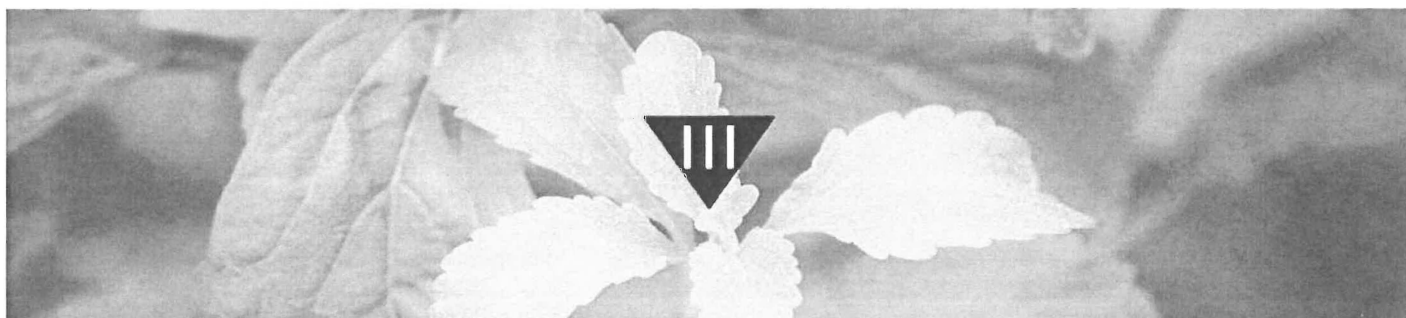
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PCF-59

**BEE BREAD PRESERVATION METHODS: PHYSICO-CHEMICAL AND MICROBIAL STABILITY  
THROUGHOUT STORAGE**

Nehed Smati<sup>1</sup>, Volkan Aylanc<sup>1</sup>, Miguel Vilas-Boas<sup>1</sup>, Vítor Manuel Ramalheira Martins<sup>1\*</sup>, Paula Cristina Azevedo Rodrigues<sup>1\*</sup>

<sup>1</sup>Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal

\*vmartins@ipb.pt; prodrigues@ipb.pt

Bee bread is an important beehive product, with growing commercial interest due to its high nutritional value and to the bioactive compounds it contains, setting it as a good supplement as a functional food. Considering human safety and the significant impact that bee bread is gaining in the field of human nutrition, this work evaluates the effect of distinct preservation techniques on the bee bread physico-chemical and microbiological parameters, throughout a storage period of 3 months.

Similar bee bread portions were submitted to four distinct conditions: i) storage at room temperature without previous treatment, ii) oven drying at 30 °C for 24 hours and storage at room temperature, iii) freeze drying and storage at room temperature, and iv) storage at -20 °C (freezing). Samples were taken from each treatment set immediately after the application of the treatments (T0), and after one (T1) and three (T3) months of storage. For each time point of analysis, the samples were analyzed for several microbiological, nutritional, and bioactive parameters [2, 3, 4].

The results showed a decrease of the concentration of the total phenolic compounds and a consequent decrease in the antioxidant activity. No variation was detected for the other physico-chemical parameters. As for the microbial analysis, the results showed a decrease in bacterial loads, but yeasts, molds and lactic acid bacteria kept a constant trend. No difference was observed throughout time between treatments. These results could be explained by the low levels of water activity ( $a_w < 0.6$ ) and pH (< 4.1), which were maintained constant for the four conditions of preservation through time. These results suggest that, for the evaluated storage period, all the studied preservation treatments enabled to maintain water activity and pH values, which seem to contribute to effectively control the growth of microbial loads.

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