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Poster Presentation

Stability evaluation of a bee bread and honey mixture

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Abstract:
Bee bread is a bee product prepared in honeycombs by fermenting bee pollen collected and partially processed by bees. The interest in bee bread is justified by the fact that it is a nutritionally rich food with potential biological activity, often being classified as a functional food. However, due to the difficulty normally associated with its production, beekeepers have not properly valued bee bread. Thus, the main objective of this work was to contribute to bee bread valorization through the formulation of an innovative product consisting of a mixture of bee bread and honey, what could be a good solution for its preservation. The study integrates the evaluation of the mixture stability over a storage period of three months. The combined product was characterized at the time of mixture (T0), after one month (T1) and three months (T3) of storage at room temperature. The analytical procedure focused on the analysis of the physicochemical (water activity, moisture content, pH, ash, protein, fat content and free acidity) and microbiological parameters (aerobic mesophiles, yeast and molds, lactic acid bacteria, spores of sulfite-reducing clostridium, coliforms, *Escherichia coli* and *Staphylococcus aureus*). Regarding the physicochemical characteristics, the results showed that there were no significant differences over time, except for water activity, which increased from 0,54 at T0 to 0,56 after 1 and 3 months of storage, respectively. Considering the low extent of this increase and also that the water activity values were lower than 0.60, it is plausible to assume that, although statistically significant, the increase registered in the water activity values will not have a relevant impact in the mixture stability. Regarding microbiological parameters, only the sulfite-reducing clostridium spore count showed a significant decrease from 0,82 at T0 to 0 after 1 and 3 months of storage. Overall, the results from the physicochemical and microbial analysis evidenced that the mixture of bee bread and honey mixture remained stable during a storage period of 3 months, making this innovative product a feasible approach for simultaneously preserve and add value to bee bread.

Keywords: Beeproducts, stability, preservation, physicochemical and microbiological analysis

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