Foods 2024 Conference
The 5th International Electronic Conference on Foods
28–30 October 2024 | Online
MDPI

ANALYSIS OF HONEY FROM THE AVEIRO REGION

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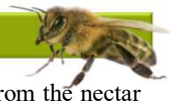
INTRODUCTION & AIM



Honey is a food produced by the bee *Apis mellifera* from the nectar of plants. It has been used for many years for its sweetening power and has particular interest in traditional medicine, with its therapeutic benefits being highlighted in recent decades. Its composition varies from region to region, from North to South of Portugal, but it is essentially composed of water, sugars, proteins, vitamins, minerals, organic acids, and enzymes. Its composition and physicochemical properties confer various activities, including antioxidant, anti-inflammatory, apoptotic, antimicrobial, and wound-healing properties, as well as an energy-providing role. The aim of this work was to assess the quality and potential adulteration of honey composition, thought qualitative and quantitative tests.

METHODS

Different tests were performed on 30 different honey samples from the Aveiro region, such as:

Organoleptic characteristics;	Microscopic examination;	Jagerschmidt reaction;
Lugol's reaction;	Search for diastase enzymes;	Search for dyes;
pH measurement.		

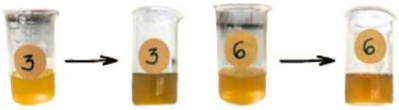
RESULTS & DISCUSSION

Jagerschmidt reaction:

Negative result in 96.7% of samples (n=29)

Lugol's reaction:

Negative result in 100% of samples (n=30); however, 2 samples presented an anormal coloration.



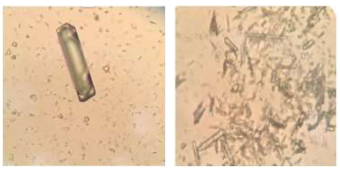
Search for diastase enzymes:

Positive results in 76,7% of samples (n=23); no alteration (n=2), decreased diastase activity (n=2) and high enzymatic activity (n=3) in the other samples

standard presence of diastase enzymes | *presence of diastase enzymes* | *weak diastasic activity* | *strong diastasic activity*

Microscopic examination:

15 samples had sugar crystals



Search for dyes:

100 % negative results

pH values: pH values ranged from 3.97 to 4.75 (average value of 4.37)

pH=4.35 for *Eucalyptus* honey; pH=4,41 for *Calluna vulgaris* honey; pH=4,08 for *Rosmarinous* honey; pH=4,36 for *Calluna vulgaris* and *Eucalyptus*; pH=4,75; B*accharis trímera and Calluna vulgaris* honey 4.75; pH= 4.36 for B*accharis trímera and Eucalyptu*s honey

CONCLUSION

Overall, 96.7% of the samples showed no alterations in the tests carried out; only one presented sugar crystals and tested positive in Jagerschmidt reaction, which can be a strong sign of adulteration either caused by heat, due to incorrect packing or by the addition of sugar. However, more quantitative tests are needed to confirm these preliminary results.

Strong signs of adulteration

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