

Physicochemical and microbiological evaluation of urban honey from stingless bees

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INTRODUCTION & AIM

The stingless bee, native to Brazil, are fundamental for the preservation and balance of ecosystems, and they produce honey with high added value. There are still few reports about its quality characteristics, especially in terms of physicochemical and microbiological evaluations [1-2]. The aim of this study was to elucidate the physicochemical and microbiological profile of honey from stingless bees in urban areas.

METHOD

To achieve this, fresh stingless bee honey produced for local consumption in Curitiba and Almirante Tamandaré was analyzed. Two samples of stingless bee honey from the species *Melipona marginata* (A) and *Melipona bicolor* (B) were collected (Figure 1), in aliquots and analyzed in duplicate, and analyzed in duplicate for color, moisture, water activity, pH, aerobic mesophile count, lactic acid bacteria, yeasts and molds, and the most probable number of total and thermotolerant coliforms [3-5].

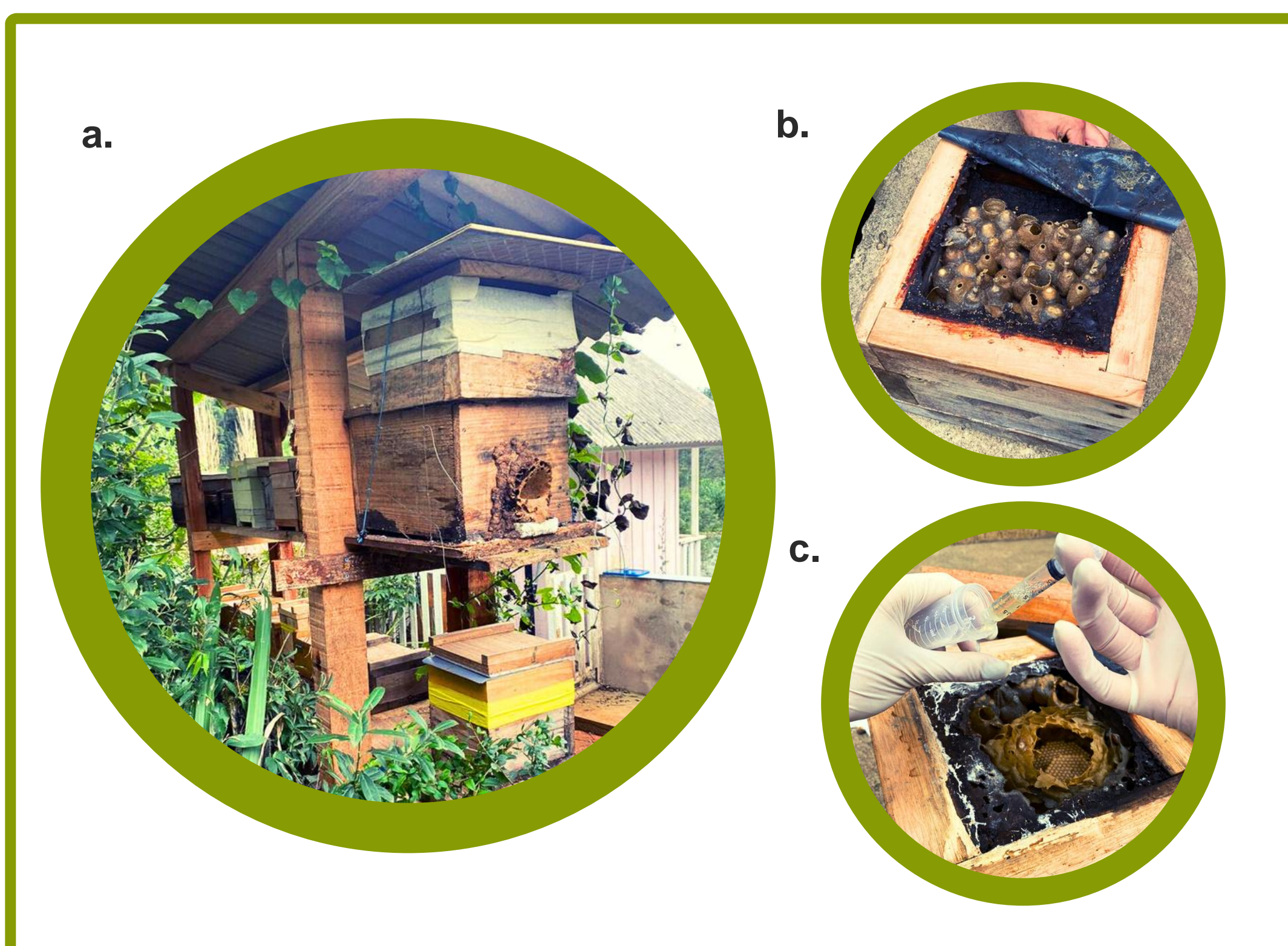


Figure 1. Sample collection: a. Hive location; b. Opening the box and exposing the hive; c. Honey collection with syringe;

RESULTS & DISCUSSION

The data from the analysis of the samples is shown in Table 1.

Table 1. physicochemical and microbiological analysis results

Analysis	Sample A	Sample B
Color	Light Amber	Light Amber
Humidity (%)	36.06	33.41
Water Activity	0.72	0.69
pH	3.41	2.55
Mesophilic Aerobes (log UFC/mL)	4.6	5.39
Lactic Acid Bacteria (log UFC/mL)	5.44	5.05
Yeasts and Molds (log UFC/mL)	3.51	5.88
Total and Thermotolerant Coliforms	Not Detected	Not Detected

CONCLUSION

The honeys evaluated were characterized by high humidity, but low water activity, acidic pH, the presence of beneficial bacteria, and for containing environmental contaminants (mesophiles, yeasts, and molds). The absence of total and thermotolerant coliforms is indicative of the good hygiene and health quality of the products evaluated. Further studies are needed to better understand the characteristics of these products.

ACKNOWLEDGMENTS

The authors thank the Coordination for the Improvement of Higher Education Personnel (CAPES) and National Council for Scientific and Technological Development (CNPq) for their support.

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