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The Characterization of Dark and Sensory-Affected Honeys from Entre Ríos (Argentina) for Their Valorization as Food Ingredients

Brelis Lucía Elisabet 1,3, Sanguinetti Agustin 2,3 , Genevois Carolina Elizabeth 1,3, Busch Verónica 1,3

1. Instituto de Ciencia y Tecnología de los Alimentos de Entre Ríos ICTAER (CONICET-UNER)
2. Departamento de Biodiversidad y Biología Experimental, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, CABA, Argentina
3. Facultad de Bromatología, Universidad Nacional de Entre Ríos UNER.

INTRODUCTION & AIM

Food color significantly influences consumer preferences

DARK AMBER HONEY  **WATER WHITE HONEY**

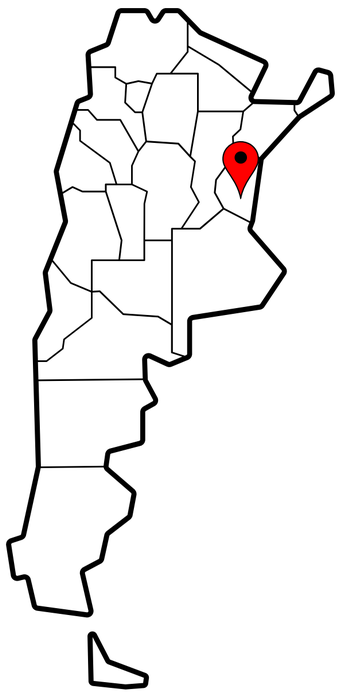
Darker honeys are **less favoured** in Argentina **compared to lighter ones.**

This results in **lower market prices** for darker honeys.

Rhamnaceae plants are linked to **unpleasant-smelling honeys**, but "coronillo" honeys may lack this aroma, possibly due to resources used by bees during droughts.

This study aimed to analyze the botanical origin and physicochemical parameters of dark amber honeys and those with sensory defects to evaluate their potential use as ingredients.

METHOD



14 honey samples

from Entre Ríos, Argentina
(2022 and 2023 harvests)

Botanical origin

Pollen frequency class
(Louveaux et al., 1978)

Physicochemical parameters

Moisture (AOAC 969.38 B, 2000)

Electrical conductivity
(Serra Bonvehi et al., 2019)

pH (Bogdanov et al., 1997)

Acidity (AOAC 962.19, 1995)

Diastase activity (Ceballos et al., 2021)

Flavonoids (Woisky y Salatino, 1998)

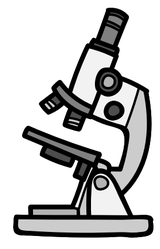
Glucose (Goñi et al., 1995)

Color (Gonzales Miret et al., 2005)

Data analysis

Statgraphics Centurion XV.II
Version 17

RESULTS & DISCUSSION



Botanical origin

Melissopalynological analysis revealed that samples with unpleasant odors contained **less than 30%** Scutia buxifolia pollen, which is linked to the undesirable sensory characteristics.

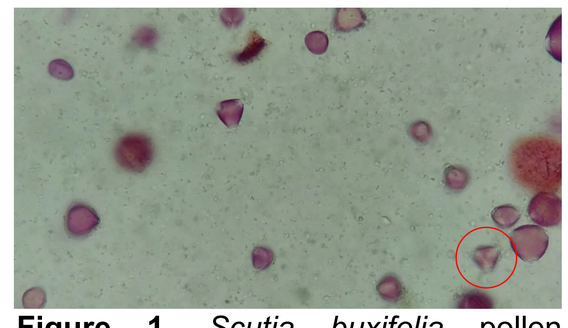
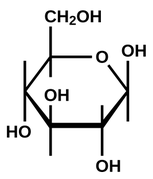


Figure 1. *Scutia buxifolia* pollen highlighted with a red circle. Image captured at 40x magnification.

Physicochemical parameters

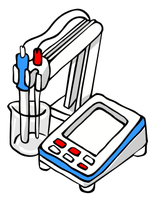
In terms of physicochemical parameters, most honeys were classified as "Amber" and "Dark Amber" on the Pfund scale.

Pfund Scale



The **glucose** content was 29.4% ± 3.44%.

The **moisture** content averaged 18.8% ± 0.42%.



Conductivity: were 1233 ± 292 µS/cm (some high conductivity values suggest that some samples may have a honeydew origin in addition to a floral one)
pH: 4.64 ± 0.32
Acidity: 26.38 ± 11 meq/kg of honey.

All samples exhibited **diastase activity** greater than 8 DN, with an average of 31.8 ± 9.0 DN. Regarding **flavonoids**, values of 4.20± 0.98 mg quercetin equivalents per 100 g of honey were obtained.

Meets the Codex Alimentarius standards

CONCLUSION

The analyzed honeys showed good physicochemical properties and high bioactivity.ese preliminary results offer insights into the characteristics of dark honeys and their potential for developing new products with improved sensory properties, thereby adding value to this type of honey.

FUTURE WORK / REFERENCES

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