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PP-584 [Pollination and Bee Flora]

Unifloral honeys from native plants produced at the protected area of Montes del Queguay, Uruguay: palynological characterization

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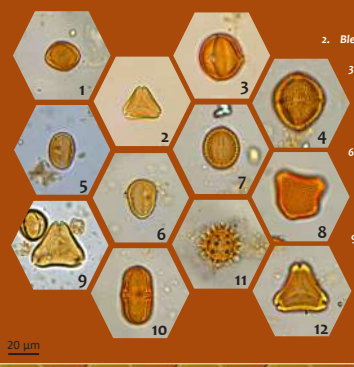
INTRODUCCION

- Melissopalynological analysis of 40 honeys to determine botanical origin and to evaluate the possibility of geographical identification
- Location: Montes del Queguay Area, Paysandú Department in Uruguay (area included into the protected area system-SNAP)
- Area characterization: great diversity of environments and types of vegetation, species with priority for conservation, including one of the largest masses of natural riverside forests.
- Sampling: honeys from main harvest season over 3 consecutive years (2022, 2023 and 2024)
- Methodology: standardized methods for melissopalynology (Louveaux et al. 1978)

MAIN POLLEN TYPES and frequency in samples (%)



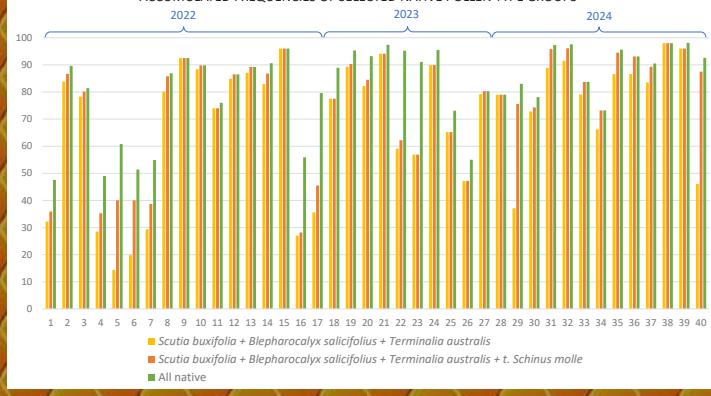
1. *Scutia buxifolia* (100%) *
2. *Blepharocalyx salicifolius* (100%) *
3. *Terminalia australis* (100%) *
4. t. *Schinus molle* (93%) *
5. *Lotus* spp. (80%)
6. *Echium plantagineum* (80%)
7. *Salix* sp. (75%) *
8. *Allophylus edulis* (55%) *
9. Myrtaceae (native) (60%) *
10. *Eryngium* sp. (90%) *
11. *Baccharis* spp. (73%) *
12. *Eucalyptus* sp. (88%)

* = native taxa

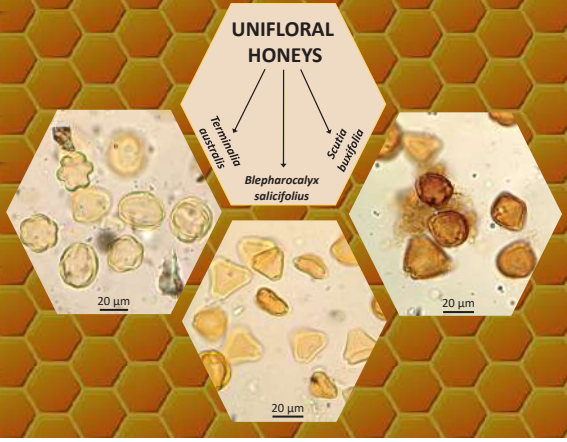
RESULTS

- 136 pollen types identified in 40 samples, 45 representing native taxa
- 19 samples resulted unifloral from native plants
- 13 unifloral honeys of *Blepharocalyx salicifolius* (3 on 2022, 2 on 2023 and 8 on 2024)
- 3 unifloral honeys of *Scutia buxifolia* (2 on 2022 and 1 on 2023)
- 3 unfloral honeys of *Terminalia australis* (1 on 2022 and 2 on 2023
- In 2024, only *Blepharocalyx salicifolius* unifloral honeys were obtained
- *Blepharocalyx salicifolius*, *Scutia buxifolia* and *Terminalia australis* were present in 100% of de samples with accumulated frequencies above 46% in 80% of the samples
- Accumulated frequencies of all native taxa per sample was above 46% in all the samples

ACCUMULATED FREQUENCIES OF SELECTED NATIVE POLLEN TYPE GROUPS



UNIFLORAL HONEYS



DISCUSSION AND CONCLUSSIONS

- Beekeeping production in the studied area is highlighted by the production of unifloral honeys from native plants.
- Pollen spectra show high diversity but are almost always dominated by native taxa, were *Blepharocalyx salicifolius*, *Scutia buxifolia*, *Terminalia australis* and t. *Schinus molle* play a special role as nectar resources for bees.
- Diminishing in frequencies of native taxa are associated to blossoms of prairies (*Lotus corniculatus*), artificial woods (*Eucalyptus* spp.) and cultures (*Brassica napus*).
- On the basis of the data herein obtained, it can be assumed that the pollen characterization of unifloral honey samples from native species produced at Montes del Queguay Protected Area would be feasible from both botanical and geographical points of view.
- These results could stimulate producers to strength their beekeeping practices to harvest honeys with specific characteristics in order to search for an added value of their products.

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The pollen content of 41 honey samples from the main harvest of beehives located in the Montes del Queguay Area, Paysandú Department in Uruguay, was analyzed. This area was included into the protected area system (SNAP) in 2014, provoking a growing interest in the analysis of the products obtained within it as a way of seeking the sustainability of the ecosystems and the valorization of products there produced as the case of its honeys.. The Montes del Queguay area is characterized by containing a great diversity of environments, types of vegetation and the presence of priority species for conservation. Likewise, it includes one of the largest masses of natural riverside forests in the country. The samples here studied were harvested over 3 consecutive years (2022, 2023 and 2024), corresponding to the main production period in this region. For the pollen concentration, standard melissopalynological procedures with acetolysis were applied. From the total of harvested samples, 19 samples resulted unifloral from native plants. Thirteen (13) of the 41 honey samples were unifloral of Blepharocalyx salicifolius (3 on 2022, 2 on 2024 and 8 on 2024), 3 of Scutia buxifolia (2 on 2022 and 1 on 2023) and 3 of Terminalia australis (1 on 2022 and 2 on 2023). In 2024, Blepharocalyx salicifolius was the unique native species from which unifloral honeys were produced. Highest frequencies in unifloral honeys were 83.7 % for Blepharocalyx salicifolius, 58.1 % for Scutia buxifolia and 73.2 % for Terminalia australis. The three native species producing unifloral honeys along the studied years were present in the 100 % of the samples, their accumulated frequency varied between 65 and 98 %, being over 75 % in 89 % of the samples. On the basis of the data herein obtained, it can be assumed that the pollen characterization of unifloral honey samples from native species produced at Montes del Queguay Protected Area would be feasible from both botanical and geographical points of view. These results could stimulate producers to strength their beekeeping practices to harvest honeys with specific characteristics in order to search for an added value of their products.