



Study of the Conductivity of the Uruguayan Honey



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1 - CALAS - LATU - DINAPYME project 2006. 2 - MELIKA S.A. - LATU - DINAPYME project 2006. 3 - MELIKA S.A.. 4 - CALAS..

5 - DINAPYME . 6 - LATU - Technological Laboratory of Uruguay

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Introduction: Our beekeeping is increasingly developing. More than ninety per cent of the production is sold for export. Nearly 10000 tons of honey, which account for an income of 18 millions US dollars, were sold in 2006. Two beekeepers companies, CALAS and MELIKA S.A in conjunction with LATU and DINAPYME worked together in the research of the best cost-effective and competitive price of honey for the commodities market. Moreover, it is known that honey with higher levels of conductivity is better paid in the international market. The aim of this work was to investigate the honey produced by these beekeepers companies and to know the relationship between the botanical origin and the conductivity.

Methodology: 23 honey samples were sent to LATU from November 2006 to May 2007. Samples came as honey-comb-frame. They were extracted by press and filtered through a synthetic cloth, 1 mm opening size. Analysis performed at LATU Laboratorio Tecnológico del Uruguay: Moisture – by AOAC Official Methods of Analysis (2005) Method 969.38 Table 969.38, Determination of electrical conductivity Harmonized Methods of International Honey Comisión (2002), Melissopalynology analysis (J. Loveaux, A Maurizio, and G. Vorwohl 1970).

Results:

Sample number	Conductivity (µSm/cm)	Colour (mmPfund)	Colour name	Botanical origin
1	223	13	Extra White	<i>Lotus spp</i>
2	184	21	White	<i>Lotus spp</i>
3	223	28	White	<i>Lotus spp</i>
4	324	31	White	<i>Lotus spp</i>
5	257	35	Extra Light Amber	<i>Brassica spp</i>
6	323	36	Extra Light Amber	<i>Lotus spp</i>
7	439	41	Extra Light Amber	<i>Citrus spp</i>
8	321	46	Extra Light Amber	<i>Lotus spp</i>
9	305	49	Extra Light Amber	<i>Lotus spp</i>
10	309	50	Extra Light Amber	<i>Lotus spp</i>
11	384	53	Light Amber	<i>Lotus spp</i>
12	477	54	Light Amber	<i>Lotus spp</i>
13	512	55	Light Amber	<i>Baccharis spp</i>
14	583	60	Light Amber	<i>Brassica spp</i>
15	314	62	Light Amber	Unknow
16	736	68	Light Amber	Unknow
17	764	68	Light Amber	<i>Lotus spp (*)</i>
18	867	76	Light Amber	Natural bush
19	697	79	Light Amber	Polyflora
20	818	79	Light Amber	Honeydew
21	889	79	Light Amber	<i>Eucalyptus spp</i>
22	814	80	Light Amber	<i>Eucalyptus spp</i>
23	805	89	Amber	<i>Lotus spp (**)</i>



Lotus spp



Brassica spp



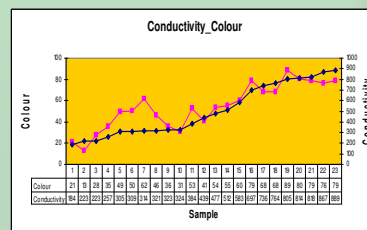
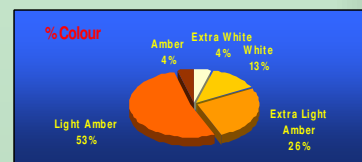
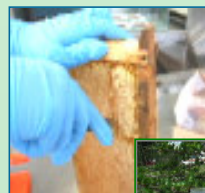
Honeydew



Eucalyptus spp



Natural bush



(*) = Secondary Pollen: *Eucalyptus spp*

(**) = Secondary Pollen *Eryngium sp.*, *Blepharocalyx salicifolius*

DISCUSSION

The results showed that samples were mainly monoflora-honey. The darker the honey the more electrical conductivity. There seems to be a direct correlation between conductivity and colour at levels higher than 400 microS/cm. The highest electrical conductivities come from uruguayan-natural-bush-honey, eucalyptus-forest-honey and honeydew. Our native bush honey is unique in the world, with a typically strong flavour; high levels of conductivity and provides a good source of minerals. It is feasible for these beekeepers companies, CALAS and MELIKA S.A. to find a better niche market for this type of honey, taking into account the strong need for healthy food worldwide. It will be necessary to encourage these beekeepers to obtain this type of honey by placing the hives near the native bush and eucalyptus forest. Native uruguayan bush honey offers a challenge for young researchers to promote our honey. Honeydew honey is rare in Uruguay and it could be an interesting area for further research.

Authors' Acknowledgements: We would like to express our gratitude to M. Borthagaray, J. Silveira, R. Montañez., N. Guidobono, G. Rodriguez, Stella Cristobal

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