

Tests for some adulterations in honeys produced by *Apis mellifera* in the state of Rio Grande do Sul

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Introduction

The honey produced by the honeybees is a very complex product composed mainly of glucose, fructose and water. The composition of honey depends of flora, climate, processing and storage conditions¹.

The high value of honey puts it at risk for economically motivated adulteration because of strong economic incentives.²

In this work, it was performed tests of ten honeys without any processing produced at different cities of the Rio Grande do Sul to analyze possible adulterations.

Results and Discussion

In this work, quick tests for some adulteration in honey were performed: apparent sucrose content, Lugol's test and Lund's test. The methodologies adopted are in accordance to the Adolfo Lutz Institute's manual³.

Honey samples from the cities of Nova Esperança do Sul (NE1, NE2 and NE3), Santiago (S1 and S2), Itacurubi (I1), Santo Antônio das Missões (SA1), São Francisco de Assis (SF1), Alegrete (A1), Jaguari (J1) and Manoel Viana (MV1) were analyzed. The results of Lund's test are presented in the Figure 1.

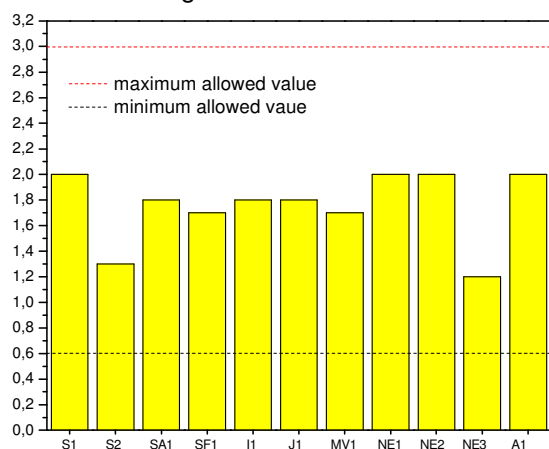


Figure 1. Values of Lund's test.

The Lund's test indicates the loss or addition of protein substances in the honey⁵. The registered mean values to the Lund's test were in the range of 1.2 – 2.0 mL. Therefore, all honeys presented values

to the Lund's test in accordance with the Brazilian's law⁴.

The Lugol's test indicates the presence of starch and dextrans in the honey⁵. In this work, all honeys presented a negative response in Lugol's test. The Figure 2 shows the results of Lugol's test.

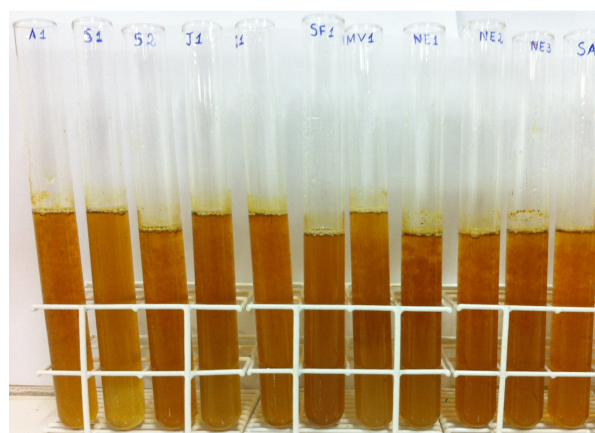


Figure 2. Lugol's test.

The Brazilian's law allows a maximum of 6% of sucrose in the honey⁴. The analyzed samples in this work did not present the presence of sucrose and therefore they are in accordance with the law.

Conclusions

All analyzed honeys are in accordance with the Brazilian's law. Further work is however necessary to determinate other two important parameters to evaluate adulterations: hydroxymethylfurfural content and diastase activity.

Acknowledgements

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¹ Yücel, Y. e Sultanoğlu, P. *Food Biosci.* **2013**, *1*, 16.

² Strayer, S.E.; Everstine, K. e Kennedy, S. *Food Protection Trends*, **2014**, *34*, 8.

³ Instituto Adolfo Lutz. *Métodos físico-químicos para análise de alimentos*. 4. ed. São Paulo: Instituto Adolfo Lutz, 2008.

⁴ Brasil. Ministério da Agricultura e do Abastecimento. Instrução Normativa N° 11, de 20 de outubro de 2000 Regulamento técnico de identidade e qualidade do mel. Diário Oficial [da] República Federativa do Brasil, Brasília, DF, 23 out. 2000, seção 1, p. 16-17.

⁵ Bera, A. e Almeida-Muradian, L.B. *Ciênc. Tecnol. Aliment.*, **2007**, *27*, 49.