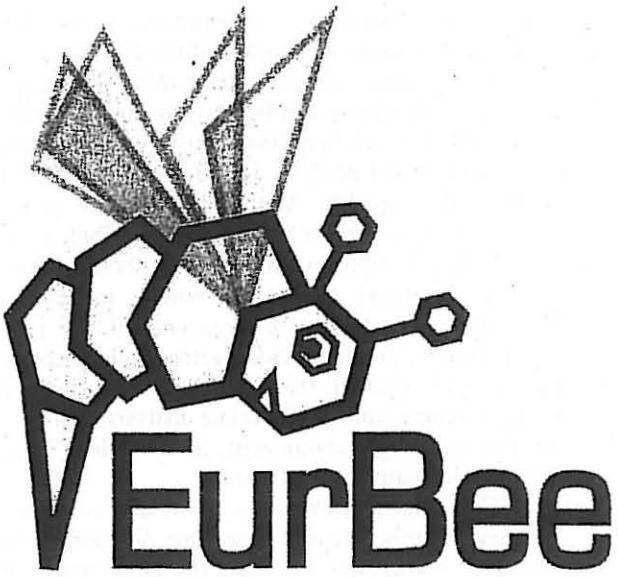

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A SURVEY ON PORTUGUESE HONEY PHYSICO-CHEMICAL PARAMETERS

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There is a growing demand of natural products in human diet, both due to the possible negative effects of synthetic food additives on human health and to the increased consumer perception of these products benefits. Among them we find honey, one of the most complex foodstuffs produced by nature and certainly the only sweetening agent that can be used by humans without processing. Honey characteristics are directly dependent on the flora visit by bees, and this is reflected on its composition. Physico-chemical analysis is used routinely to classify different types of honeys and evaluate their quality. With this work we present a general idea on the chemical properties of Portuguese honeys and contribute to their classification.

Honey samples were directly obtained from the beekeepers and collected at different locations across the country, including islands, with help of the National Federation of Portuguese Beekeepers and their partners. Standard parameters as colour, water content, pH, free acids, lactones, electrical conductivity and sugars, together with total phenols content, were collected using the methods validated by the International Honey Commission. Multivariate analysis helps to look at the sample in its entirety and not just at a single component, if we wish to untangle all the complicated interactions between the matrix constituents.

The results allowed us to associate parameters values to specific regions in Portugal, simply because there are differences in botanical origin: higher values of electrical conductivity are found for darker honeys and higher levels of total phenols and can be located mostly on the north/centre regions. South shows higher amounts of light honey with lower electrical conductivity.

DETERMINATION OF SULPHA DRUGS IN HONEY BY LC-MS/MS

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Sulpha drugs are sometimes used in apiculture to prevent or to treat bee diseases as nosemosis or bacterial brood diseases. This practice, causing residues in the honey is illegal in Europe since no MRLs for sulphonamides are fixed for honey (Council Regulation N°2377/90). In case of analysis, screening is done making use of the Charm II-Sulpha Honey test. For the confirmation of the results, a liquid chromatographic-tandem mass spectrometric method was developed and validated according to Commission Decision 2002/657. Clean-up was based on the method described by Maudens *et al*[1]. In short, an aliquot of honey was dissolved in hydrochloric acid followed by an extraction with acetonitrile and a SPE clean-up making use of C_{18} columns. The extracts were injected into the LC-MS/MS system. Sulfachoropyridazine was used as internal standard. For the 7 sulpha drugs tested in honey the decision limit (CCα) was 2 µg/kg and depending on the type of sulpha drug the detection capability (CCβ) was in the range of 2.2 – 2.4 µg/kg. All these values are far below the action limit