Book of abstracts of the

II International Symposium on Bee Products
Annual meeting of the International Honey Commission

September 9-12, 2012

School of Agriculture

Polytechnic Institute of Bragança

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Portugal

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Conference Overview

Monday (10-09-2012)

9H30 - 10H00	Open ceremony
10H00 -11H00	Plenary session – P1. Biological and functional properties of bee products for medicinal purposes. Invited Speaker: Maria G Campos (Porugal)
11H00 -11H30	Coffee break
11H30 -11H45	OC1. Protein complexation by polyphenols during honey storage is linked with a decline of its antibacterial activity.
11H45 -12H00	OC2. The physiological potential of honey based on immunostimulatory effects of royal jelly proteins.
12H00 -12H15	OC3. Propolis: antimicrobial activity, phenolic compounds and role in the inflammation.
12H15 -12H30	OC4. Solid state fermentation of bee-collected pollen induced by lactic acid starter cultures with probiotic bacteria.
12H30 -14H00	Lunch
14H00 - 15H00	Plenary session – P2. Standards for bee product and for their analyses – the BEEBOOK option. Invited Speaker: Peter Gallmann (Swiss)
15H00 -15H15	OC5. Pollen composition discrimination by FTIR-ATR spectroscopy - Ofélia Anjos, Portugal
15H15 - 15H30	OC6. Determination of physicochemical characteristics of honey comparing reference methods and fourier transform infrared spectroscopy performed in four different laboratories.
15H30 - 15H45	OC7. Novel, direct, reagent-free method for detection of beeswax adulteration by single reflection attenuated total reflectance mid-infrared spectrometry.
15H45 - 16H00	OC8. Slovenian honeys database: examples of the use of data.
16H00 - 16H30	Coffee break
16H30-16H45	OC9. Honey authenticity: overview of state-of-the-art methodology and new analytical developments for the detection of honey adulteration with sugar syrups.
16H45 - 17H00	OC10. Development and validation of a liquid chromatographic - tandem mass spectrometric method for the detection of fumagillin in honey: use in a stability study.
17H00 - 17H15	OC11. Optimization of polarimetric method for specific rotation determination in honeys.
17H15 - 17H30	OC12. Sugar analysis by a multi-sensor system: applying to honey samples.
17H30 -19H30	Visit to the natural park of "Montesinho".
20H30	Symposium banquet

Conference Overview

Tuesday (11-09-2012)

9H00 -10H00	Plenary session – P3. Improvements of European legislation governing bee products. Invited Speaker: Andreas Thrasyvoulou (Greece)
10H00 -11H00	Poster Session
11H00 -11H30	Coffee break
11H30 -11H45	OC13. Royal Jelly: Quality, Safety and Authenticity.
11H45 -12H00	OC14. Bee feeding influences royal jelly composition.
12H00 -12H15	OC15. Chemical composition of dehydrated bee pollen produced in Brazillian states Paraná and Santa Catarina.
12H15 -12H30	OC16. A contribution to the establishment of bromatological reference values for Colombian pollen in the context of Latin American regulations.
12H30 -14H00	Lunch
14H00 - 15H00	Plenary session – P4. Honey characterization, a useful tool for local honeys. Future challenges. Invited Speaker: Antonio Bentabol
15H00 -15H15	OC17. A model project: research platform on honey and other bee products.
15H15 - 15H30	OC18. Physicochemical characteristics of Colombian pot-honey.
15H30 - 15H45	OC19. Characterization of the Serbian honey using modern analytical methods.
15H45 - 16H00	OC20. Chemical, sensory and melissopalynological features of Croatian common sage (Salvia officinalis L.) honey.
16H00 - 16H15	OC21. Sensory profile of some of the main Italian unifloral honeys. Development and possible uses.
16H15 - 16H45	Coffee break
16H45 - 17H00	OC22. The main honeydew producing insects in Greece.
17H00 - 17H15	OC23. Study of the perception of a liquid and translucent honey and creamed honey in France.
17H15 - 17H30	OC24. Pyrrolizidine alkaloids in Swiss honey and bee Pollen.
17H30 -17H45	OC25. Effect of high cell density fermentations on the optimisation of mead fermentation.
17H45 - 18H00	OC26. Monitoring the gravitational reflex of the ectoparasitic mite Varroa destructor: a novel bioassay for assessing toxic effects of acaricides and possible acaricidal properties of honeybee products.
18H00	Closing ceremony

OC25. Effect of high cell density fermentations on the optimisation of mead fermentation.

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Mead is a traditional drink, containing 8-18% (v/v) of ethanol, which results from the alcoholic fermentation of diluted honey performed by yeasts. It has been reported that mead fermentation is a time-consuming process, often taking several months to complete, depending on the type of honey, yeast strain and honey-must's composition. An important objective of mead makers is to reduce the fermentation time without decreasing the quality of the end product. It has been shown that significant time can be saved in the fermentation process by increasing the pitching rate, *i.e.*, the amount of suspended yeast cells added to a batch fermenter. Therefore, the aim of this study was to determine the adequate inoculum size of two commercial winemaking strains of *Saccharomyces cerevisiae* (Lalvin QA23 and Lalvin ICV D47) for the optimisation of mead fermentation. Honey must was prepared according to the recipe developed by our team, supplemented with potassium tartrate, pH adjusted to 3.7 with malic acid and the nitrogen concentration adjusted to 267 mg/L with diammonium phosphate. The appropriate amounts of inoculum were pitched into the honey-must to obtain five different pitching rates. Several parameters were determined during the fermentation to evaluate the effect of the inoculum size on yeast growth, fermentation profile and mead composition. Minor differences between the two strains in respect to growth kinetics were detected. As expected the increasing of the inoculum size resulted in significant increases in cell biomass and CFUs' numbers but also decreased the yeast net growth. The time required to reach the same stage of fermentation ranged from 24 to 96 hours depending on the inoculum size. In accordance to the results obtained the strain ICV D47 appears to be more suitable for the production of high quality meads, although the strain QA23 provided better fermentation profile. However, sugars were not fully consumed and about 25 mg/L of assimilable nitrogen remained at the end of all fermentations. This is the first study of the effect of inoculum size on the optimisation of mead fermentation, however further research is needed to improve its quality.

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