BEEKEEPING ECONOMY

POSTER SESSION 01
BEEKEEPING ECONOMY I

[P.01.01] Effect of the incorporation of information technology in hives to ensure traceability in honey production in Argentina

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The difficulty in identifing the honey origin and avoiding adulteration of it has increase the concern of the government, public and private organizations of the sector and the community, by virtue of the health hazards that this may cause. The purpose of this reserch is to identify the main efforts, in favor to offer best traceability in the productive value chain, to guarantee the aptitude of the honey arrives to the consumer, in accordance with the requirements of government agencies. For that reason,current status on the honey production was analized considering producers, collectors, exporters,public/private association of the sector and government.

As a result of the work, a model of productive traceability is proposed, which integrates the different links that make up the value chain, supported for the use of TIC (app, IOT, Sensors,software) from the origin to the end of the chain. This proposed model offers different actors of the chain access and generation of the relevant information from the use of sensors inside the hives to promote greater knowledge about the production process used, as well as having the visualization of the process as a contribution to the validation of what has been done in the different stages of the process. The use of the new technology, as guarantee of each step of the beekeeping chain, allows us an added value for the commercialization of the products genuine and natural, allowing to testify the denomination of origin of the same.

[P.01.02] Establishment of Identification Techniques for Taiwan Longan Honey

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Honey is a natural health product with high nutritive value. However, honey might be adulterated in various ways. The most common adulteration method is mixing different syrups during or after honey production. Instead of visiting the C4 plants, honey bees prefer to visit the C3 plants for nectars. Therefore, analysis of the difference between stable carbon isotope in C3 and C4 plant is a method to detect the honey adulteration. In this study, 117 awarded longan honey, 27 certified longan honey, 20 non- longan honey, 10 certified non-longan honey, 66 commercial honey and 9 commercial syrups from Taiwan, 54 longan honey from Thailand, 19 China honey were subjected to our analysis. The result showed by AOAC 998.12, 3 of Taiwan awarded longan honeys were adulterated, 1 of Taiwan certified longan honey was adulterated, 4 of Thailand longan honeys were adulterated, 8 of Taiwan non-longan honeys were adulterated and 30 of Taiwan commercial honeys were adulterated. In addition, the $\delta 13$ value of 3 commercially sugar syrup (C3, cassava) were -26.28, -25.63 and -25.16, respectively. We assumed that the C3 sugar syrup was added to the honey in production process, thus it could not be detected by the current technique. Alternatively, more detection methods should be created for cross-comparison. The 2-Acetylfuran-3-Glucopyranoside (AFPG) was used as an auxiliary standard of LC-MS/MS, the result showed that AFGP was not detected in any pure honey sample, the AFGP content in C3 syrup was 1.92, 0.22 and 0.45 ppm, respectively. Therefore, 5 commercial suspected adulterated honeys were selected for AFPG analysis, AFPG content were found in 2 of these samples, hence the two samples were considered as adulterated. Finally, we also analyzed the protein content of Taiwan longan honey and Thailand longan honey, the result showed that the protein content has a significant difference, and could be used to trace the origin identification of longan honey.

[P.01.03] Producing high quality honey in Argentinian sub tropic

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Honey production in Northern Argentina is an ancestral activity. In the last twenty years, the development and application of technological paths adapted to subtropical environment has impacted in the efficiency of the process increasing honey yields and complying with the highest quality standards. In this sense, the adopted technology proposes harvesting of sealed honey, ripened within the colony in order to obtain a genuine product that preserve all the natural substances that honeybees add during this process. The objective of this work is the evaluation of the adjustment of the technological trail proposed in order to be adapted to climatic variations in the region. This work was carried out in three apiaries of different beekeepers from El Galpón, which is located in the Gran Chaco Region, Argentina (25 ° 24 'South Latitude and 64 ° 39' West Longitude), at an altitude of 625 MSNM, with average temperature of 20.2 ° C (maximum January