



JRC Technical Report on authenticity of honey

Civil Dialogue Group Meeting

24/11/2016

Background

Legal basis:

- Regulation (EC) No 882/2004, Article 53 empowers the COM to recommend coordinated control plans to establish hazards in feed, food & animals;
- Regulation (EC) No 178/2002, Article 17 provides that fbo must ensure that their food products satisfies the requirements of food law;
- Regulation (EU) No 1169/2011, Article 7 provides that food information shall not be misleading;
- Council Directive 2001/110/EC lays down a common definition of and composition criteria for honey.



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Background

- 2014 – EP resolution: *Food crisis, fraud in the food chain and the control thereof*, listed honey as a food product most vulnerable to fraud;
- 2015 – EU coordinated control plan to assess the prevalence on the EU market of honey:
 - **adulterated with sugars;**
 - **mislabelled (botanical source/geographical origin).**
- Initial results published in December 2015:
 - **6% adulterated by sugar with further 11% suspected.**
- JRC mandated to support by conducting advanced tests to detect adulteration with sugars.

JRCs Study on authenticity of honey

- The JRC was asked to:
 - 1. Test samples collected by MS under the control plan with an advanced method;**
 - 2. Make recommendations to validate the advanced method for use by MS during official controls.**

Method used by JRC

- ⇒ **Advanced method** ⇒ capable of detecting adulterations of honey with sugar syrups that mimic sugar profiles of authentic honey.
- Method used is a combination of:
 - **EA-IRMS:** Elemental Analysis-Isotope Ratio Mass Spectrometry &;
 - **LC-IRMS:** Liquid-Chromatography coupled to Isotope Ratio Mass Spectrometry.

Method used by JRC

- This combination of testing methods can detect adulteration with sugars from *both* C3 plants (beet) and C4 plants (corn & cane).
- However:
 - **Method not validated at an international level.**
 - **Relies on empirically determined benchmark purity criteria, i.e. the selection of the honeys used may influence the compliance decision.**

JRCs Draft Recommendations

- Creation of an EU Bio-bank of honeys, sugar syrups and bee feeding products:
 - **A centralised repository of authentic samples to form basis of purity criteria of EU honey.**
- European honey reference database:
 - **To store the analytical data & sampling history from the bio-bank.**
- Validation by an international collaborative study & endorsement via standard development organisation.



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Potential uses – Commission Views

- EA/LC-IRMS can be used:
 - By the industry for business 2 business testing;
 - To check whether honey complies with the composition criteria as stated in Council Directive 2001/110/EC;
 - As a screening test for Official Controls identifying food fraud.



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Thank you
for your attention!