

# Honey authenticity: the NMR issue

## Honey authenticity

- is impacted by consumer demands ie the product consumers know as 'honey' at an affordable cost.
- is multi-faceted, involving the nature of honey itself, different production methods, processing methods, testing methods, testing processes, global supply chains etc.
- contains a wide divergence of perspectives and interpretations on the application of regulations, testing practices and interpretation of results
- involves issues unique to NMR testing where it is being used to test honey for exogenous sugars while not being universally accepted, and
- comparison data is a challenge in terms of it being fit for purpose for all honeys and furthermore not accessible as part of an audit or for comparison purposes.

NMR testing is of primary interest because it is at the centre of the current debate on testing methods for the detection of exogenous sugars in honey.

## The reference database challenge

The 'chemical fingerprinting' of NMR testing can detect exogenous sugars from both C3 and C4 plants. However, interpretation of results from NMR tests depends on comparison against a reference database of authenticated samples of known, verifiable origin and authenticity.

To ensure it is robust, the reference database needs to be representative of the variation that can occur in a product such as honey. This includes differing beekeeping practices, different origins, seasonality and variations in climate. This should ideally be publicly available or available for scrutiny by all.

A particular concern is that most NMR tests of UK honey are conducted by European labs. While European countries tend to consume primarily European honey, UK blended honey tends to be composed of honey from further afield, such as China, Mexico and Argentina.

Due to the different beekeeping practices and higher humidity in some of those regions, it is more likely to include immature honey.

## Uncertainty, frustration and urgency

NMR testing is being widely used but is producing contested results, and is not currently accepted as a yes/no test within the UK regulatory system, nor is it in the European Union. However, it is widely used.

For example, the United States of America Customs and Border Protection USA have adopted the use of NMR to test all honey imports.

The Indian government has requested that the Indian Export Inspection Council (EIC), which comes under the Commerce Ministry, makes NMR- testing mandatory for all consignments of

honey exported from India.

This is causing uncertainty, a lack of clarity, and frustration throughout the honey supply ecosystem. It is also creating inefficiencies, especially for local authorities who act as a primary authority and deal with referrals from other local authorities and port authorities, who may be using a range of testing labs and processes.

There is a palpable sense of urgency to address this in a robust and practical way that works for all perspectives and so that all may have confidence in the honey testing regime.

The current situation is causing uncertainty and frustration throughout the honey supply ecosystem.