

## Honey Authenticity Surveillance

The Canadian Food Inspection Agency (CFIA) collects samples of honey to verify accurate representation through risk-based sampling by CFIA inspectors. These samples were tested for the addition of C3 and C4 sugars using two techniques. Sugar syrups from C3 sugars (e.g. rice, beet) or C4 sugars (e.g. corn, sugarcane) are adulterants in honey. Samples are tested by the CFIA for the addition of C4 sugars using Stable Isotope Ratio Analysis (SIRA), and Nuclear Magnetic Resonance (NMR), carried out by a contracted laboratory, to detect these and other added foreign sugars, including C3 types.

Samples are assessed as unsatisfactory if either SIRA or NMR testing shows the presence of added sugars in the honey. SIRA and NMR testing are complementary as each have advantages and limitations; as such, differences in the results between these two methods are expected. When a sample is found unsatisfactory, it is considered non-compliant with relevant legislation that prohibits misrepresentation.

Samples are assessed as “No Decision” for SIRA testing when the sample does not contain enough precipitate protein for analysis, therefore C4 sugar percentage could not be calculated.

Some samples are listed as “Not Applicable” for SIRA testing when the sample was assessed based only on the NMR results.

The SIRA testing assessment is based on an internationally recognized Association of Official Analytical Chemists (AOAC) method and has a threshold limit for detection of adulteration of 7% calculated C4 sugars. The NMR testing assessment is based on the comparison of the sample to the profile of authentic honey, developed from the analysis of over 18,000 authentic honey samples and sugar syrups used for adulteration. SIRA testing reports the C4 sugar content of honey as a percentage, while NMR only reports whether addition of foreign sugars has occurred.

It is important to note that sampling is conducted based on risk factors for non-compliance, at various levels of trade and on various types of products (such as bulk, retail-packed, ingredients for further processing). As such, the results of the sampling are not necessarily representative of the Canadian marketplace overall.

It is also important to note that while the datasets provide information about the origin of the samples, practices leading to non-compliance may have occurred at various points of the supply chain (for example during processing, packaging/re-packaging) and therefore an unsatisfactory result may not always be indicative of an issue in the place of origin.

Although floral source is included in the data, it was not confirmed by CFIA through testing.

Assessment results for samples are reported in the various datasets as noted below:

S = Satisfactory / Satisfaisant

U-I = Unsatisfactory / Insatisfaisant  
ND-AD = No Decision / Aucune décision  
N/A = Not Applicable / N'est pas applicable

The CFIA takes appropriate follow-up action on unsatisfactory samples. See additional information for details on compliance and enforcement activities.