



TECHNICAL NOTE

C4 Tests for Honey Adulteration

Introduction

Honey continues to increase in market value as consumers search for natural products offering improved well-being. The health benefits offered by honey, especially manuka honey, has increased public awareness of this product, thus raising the demand and price for honey and honey related products. This surge in demand and value has given rise to illegitimate practices, including the adulteration of honey with inexpensive, readily available sources of sugar such as high fructose corn syrup and cane sugar.

Why Test?

Hill Laboratories offer two tests for C4 sugars in honey. The screen test can be used for screening incoming honey to ensure it is not adulterated. The specification method is used to verify the finished product for export. Both tests provide a quantified result and therefore an indication of the level of contamination.

Tests Available

C4 Specification Test Method: Suitable for export testing. (AOAC method 998.12) This method is used worldwide and is based on the measurement of carbon isotope ratios within the honey. Hill Laboratories uses Isotope Ratio Mass Spectrometry (IRMS) to analyse the honey for adulteration.

C4 Screening Test Method: Modified from the AOAC method to offer a cost effective and timely analysis for the screening of large numbers of honey samples for possible adulteration. This method should not be used to screen samples for export testing.

Guide to C4 screen results and how they compare to the AOAC 998.12 method	
C4 Screen Result	Interpretation
0 - 5.5%	Very likely to pass AOAC 998.12
5.6 - 7.0%	Some risk of failing AOAC method
7.1 - 8.5%	High risk of failing AOAC method
Over 8.6%	Sample will almost certainly fail AOAC method

Please note that the C4 screening method has an uncertainty of +/- 1.5% and AOAC 998.12 method has an uncertainty of +/- 0.8%.

Contacts

For further information please contact our Client Service Managers.

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