

Client:

Impumelelo Agribusiness Solutions
5 Bauhinia street
Cambridge Office Park
Unit 1, Ground floor
Centurion
South Africa



Your order no. Order 10475

Our reference no.	: PI2105210196		
Product	: Honey		
Sample description / Batch	: AGR 05/21/0138-1 (LITTLE BEE HONEY) 500G		
Sample received on / transported by	: 21.05.2021 via Parcel service	Seal	: none
Sample temp. when received / stored	: RT	Sampling	: Client
Packaging / Quantity	: Plastic container / 534 g	Start / End of analysis	: 28.05.2021 / 01.06.2021

ANALYSIS REQUESTED: 13C Isotope Analysis by EA/LC-IRMS (C4/C3-Sugars) (101158)

Parameter	Result	Unit	Method
Protein	-25.34	d13C(‰)	PM DE01.026:2019-05 (a) ¹
Honey	-24.57	d13C(‰)	PM DE01.026:2019-05 (a) ¹
Fructose (F)	-24.50	d13C(‰)	PM DE01.094:2019-05 (a) ²
Glucose (G)	-24.58	d13C(‰)	PM DE01.094:2019-05 (a) ²
Disaccharides	-25.85	d13C(‰)	PM DE01.094:2019-05 (a) ²
Trisaccharides	n.a.	d13C(‰)	PM DE01.094:2019-05 (a) ²
Oligosaccharides	n.a.	d13C(‰)	PM DE01.094:2019-05 (a) ²
Delta d13C (F-G)	0.08	d13C(‰)	PM DE01.094:2019-05 (a) ²
Delta d13C (max.) abs.	1.35	d13C(‰)	PM DE01.094:2019-05 (a) ²
C4-Sugar Content	4.90	%	PM DE01.026:2019-05 (a) ¹
F/G Ratio	1.16		PM DE01.094:2019-05 (a) ²
Portion of Disaccharides	2.55	%	PM DE01.094:2019-05 (a) ³
Portion of Trisaccharides	n.d.	%	PM DE01.094:2019-05 (a) ³
Portion of Oligosaccharides	n.d.	%	PM DE01.094:2019-05 (a) ³
LC-IRMS is not an official method for F/G ratio; n.a.: not analyzed; n.d.: not detected < 1.0 %; d13C value in permil. vs. V-PDB standard SPECIFICATIONS OF PURE HONEY: Delta d13C (F-G): not more than +/- 1.0 ‰ Delta d13C (max.) of individual d13C values: not more than 2.1 ‰ abs C4-sugar content: <= 7.0 %; portion of oligosaccharides: n.d.			
(a) : accredited method. (na) : not accredited method. (1) AOAC 998.12:2013 (2) Apidologie 39/5 (2008) 574-587 (3) Apidologie 39/5 (2008) 574-587; % related to total sugars. This document may only be reproduced in full. The results given herein apply to the submitted sample only.			

Interpretation:

Foreign sugars were not detected. Regarding the examined parameters, the sample meets the requirements for unadulterated honey (Council Directive 2001/110/EC of 20 Dec 2001).

Marvin Wellkamp
 Assistant Testing Supervisor, M. Sc