

Client:



Highveld Honey Farms C.C.
Attention: Brett Falconer
P. O. Box 11079
Rynfield 1514
South Africa

E-Mail: quality@highveldhoney.co.za
Your order no. 013060

Our reference no.	: PI2307140177		
Product	: Honey		
Sample description / Batch	: AGR 06/23/0462-5 (LITTLE BEE 500G)BN 6723		
Sample received on / transported by	: 17.07.2023 via Parcel service	Seal	: none
Sample temp. when received / stored	: RT	Sampling	: Client
Packaging / Quantity	: Dispenser / 500g	Start / End of analysis	: 13.07.2023 / 17.07.2023

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

Parameter	Result	Unit	Method
Protein	-25.91	d13C(‰)	PM DE01.026:2022-04 (a) ¹
Honey	-25.51	d13C(‰)	PM DE01.026:2022-04 (a) ¹
Fructose (F)	-25.56	d13C(‰)	PM DE01.094:2022-04 (a) ²
Glucose (G)	-25.41	d13C(‰)	PM DE01.094:2022-04 (a) ²
Disaccharides	-25.93	d13C(‰)	PM DE01.094:2022-04 (a) ²
Trisaccharides	n.a.	d13C(‰)	PM DE01.094:2022-04 (a) ²
Oligosaccharides	n.a.	d13C(‰)	PM DE01.094:2022-04 (a) ²
Delta d13C (F-G)	-0.15	d13C(‰)	PM DE01.094:2022-04 (a) ²
Delta d13C (max.)	0.52	d13C(‰)	PM DE01.094:2022-04 (a) ²
C4 Sugar Content	2.50	%	PM DE01.026:2022-04 (a) ¹
F/G Ratio	1.16		PM DE01.094:2022-04 (a) ²
Portion of Disaccharides	4.85	%	PM DE01.094:2022-04 (a) ³
Portion of Trisaccharides	n.d.	%	PM DE01.094:2022-04 (a) ³
Portion of Oligosaccharides	n.d.	%	PM DE01.094:2022-04 (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 ‰ C4 sugar content: ≤ 7.0 %; portion of oligosaccharides: n.d Expanded measurement uncertainties are as follows: Protein: ±0.4 ‰; Honey: ±0.4 ‰; Fructose: ±0.4 ‰; Glucose: ±0.4 ‰; Disaccharides: ±0.6 ‰; Trisaccharides: ±1.0 ‰; Oligosaccharides: ±1.0 ‰ (at 1.0 % level); Delta d13C [Protein-Honey]: ±0.4 ‰			
(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.			

to be continued...



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Interpretation:

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

Antonia Hofmann
Responsible Scientist, M.Sc.