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ANALYSIS REPORT No. 2507150070 DATE: 15.07.2025 PAGE 1/2

Client:

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

22507150070
PA421377

E-Mail: quality@highveldhoney.co.za
Your order no. P.O. # 338 - 086708

Our reference no.	: **PI2506300259**		
Product	: Honey		
Sample description / Batch	: **Highveld Honey Farms 500g, BN: 7479**		
Sample received on / transported by	: 30.06.2025 via Parcel service	Seal	: Original filling
Sample temp. when received / stored	: RT	Sampling	: Client
Packaging / Quantity	: Dispenser / 500g	Start / End of analysis	: 09.07.2025 / 14.07.2025

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

Parameter	Result	Unit	Method
Protein	-23.98	d13C(‰)	PM DE01.026:2022-04 (a) [1]
Honey	-24.84	d13C(‰)	PM DE01.026:2022-04 (a) [1]
Fructose (F)	-24.88	d13C(‰)	PM DE01.094:2022-04 (a) [2]
Glucose (G)	-24.78	d13C(‰)	PM DE01.094:2022-04 (a) [2]
Disaccharides	-24.99	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)	-0.10	d13C(‰)	PM DE01.094:2022-04 (a) [2]
Delta d13C (max.)	1.01	d13C(‰)	PM DE01.094:2022-04 (a) [2]
C4 Sugar Content	0.00	%	PM DE01.026:2022-04 (a) [1]
F/G Ratio	1.28		PM DE01.094:2022-04 (a) [2]
Portion of Disaccharides	3.50	%	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.

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).

Ulrike Burmester
Dept. Head Authenticity, Chemical Engineer

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ANALYSIS REPORT No. 2507170216 DATE: 17.07.2025 PAGE 1/1

Client:

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

22507170216
PA421377

E-Mail: quality@highveldhoney.co.za
Your order no. P.O. # 338 - 086708
Attachment pollen analysis: 250711007

Our reference no.	: **PI2506300259**		
Product	: Honey		
Sample description / Batch	: **Highveld Honey Farms 500g, BN: 7479**		
Sample received on / transported by	: 30.06.2025 via Parcel service	Seal	: Original filling
Sample temp. when received / stored	: RT	Sampling	: Client
Packaging / Quantity	: Dispenser / 500g	Start / End of analysis	: 09.07.2025 / 16.07.2025

ANALYSIS REQUESTED: Honey - geographical determination and pollen count by microscopy (101452)

Parameter	Description	Result	Method
Yeast content - estimated	increased (>500,000/10g)		PM DE01.045:2024-03 (a) [1]
Starch content_acc. to pollen content	high (>30%)		PM DE01.037:2009-08 (a) [2]
Honeydew elements	crystalline matter (moderate)		PM DE01.045:2024-03 (a) [1]
Other sediment	pieces of dirt		PM DE01.045:2024-03 (a) [1]
Electr. conductivity		0.15 mS/cm	PM DE01.042:2022-04 (a)
Geographical origin	not determinable		

n.d.= not detected, n.d.(Starch)=<1%, n.a.=not analysed
see attachment for results of the pollen analysis
Assessment according to Directive 2001/110/EC in combination with literature

(a) : accredited method. (na) : not accredited method. (1) DIN 10760 (2) Inhouse procedure

Interpretation:
Based on the analysed pollen spectrum the above stated geographical origin was determined for this sample.
The sample does not contain enough pollen to detect a robust qualitative pollen spectrum nor to anaylse its quantities. Therefore, a determination of the geographical and botanical origin is impossible. The yeast content can give a hint towards a fermentation or a stopped fermentation.

Dr. Salvador Ruiz Soto
Assistant Testing Supervisor, Lic. en Biología

Relative distribution of pollen of nectariferious plants after DIN10760: 2002-5

(undiff. = undifferentiated; accomp. = accompanying; signif. = significant)

n.a.	-

List of identified pollen types

Identified pollen grains of nectariferous plants

Apiaceae	Coriandrum (coriander)
Asteraceae	Achillea (yarrow)
Asteraceae	undiff. (daisy family)
Brassicaceae	undiff. (cabbage family)
Fabaceae	Trifolium (clover)
Myrtaceae	Eucalyptus (gum)
Myrtaceae	undiff. (myrtle family)
Salicaceae	Salix (willow)

Identified pollen grains of nectarless plants

Chenopodiaceae	undiff. (amaranth family)
Fagaceae	Quercus (Oak)
Moraceae	undiff. (mulberry family)

Intertek Food Services GmbH
Olof - Palme - Straße 8
28719 Bremen, Germany

Tel: +49 421 65 727 1
Fax: +49 421 65 727 222
food.germany@intertek.com

Sitz Bremen
Registergericht Bremen, HRB 28046
USt-IdNr. DE 185128973

Geschäftsführer
Ross McCluskey