

Client:



**Apis India Limited**  
**Office: 18/32, East Patel Nagar**  
**110008 New Delhi**  
**India**

FAX: 0091 112571 3631  
 E-Mail: heera@apisindia.com

**Attachment pollen analysis: 201005027**

<b>Our reference no.</b>	: <b>PI2010010086</b>		
Product	: Honey		
Sample description / Batch	: <b>DS05IC151</b>		
Sample received on / transported by	: 01.10.2020 via Parcel service	Seal	: none
Sample temp. when received / stored	: RT	Sampling	: Client
Packaging / Quantity	: Plastic container / ca. 100g	Start / End of analysis	: 01.10.2020 / 06.10.2020

**ANALYSIS REQUESTED: Pollen - geographical origin of honey (101291)**

Parameter	Description	Result	Method
Yeast content - estimated	increased (>500,000/10g)		PM DE01.040 (a) <sup>1</sup>
Starch content_acc. to pollen content	very low (< 5%)		PM DE01.037 (a) <sup>2</sup>
Colour	light amber		PM DE01.108 (a) <sup>3</sup>
Consistency	liquid		PM DE01.108 (a) <sup>3</sup>
Odour	typical for honey		PM DE01.108 (a) <sup>3</sup>
Taste	sweet,fruity,caramellike		PM DE01.108 (a) <sup>3</sup>
Honeydew elements	crystalline matter (some),spores (few)		PM DE01.108 (a) <sup>3</sup>
Others	slightly brown sediment, slightly source-specific,pieces of dirt		PM DE01.108 (a) <sup>3</sup>
Electr. conductivity		0.48 mS/cm	PM DE01.042:2018-03 (a)

n.d.= not detected, n.d.(Starch)=<1%, n.a.=not analysed  
 see attachment for results of the pollen analysis

(a) : accredited method. (na) : not accredited method. (1) DIN 10760 (2) Inhouse procedure (3) DIN 10964  
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**Interpretation:**

Judging by the analyzed pollen-spectrum, there are no objections to indicating "India" as the regional origin. Therefore, the declaration "India" as the regional origin is permissible (Council Directive 2001/110/EC dated 20/12/2001 in combination with literature). Furthermore, the yeast content can give a hint towards a fermentation or a stopped fermentation.

The pollen content of this sample is very low. It lies on the edge of the naturally occurring range for a Blossom honey.

**Salvador Ruiz Soto**  
*Assistant Testing Supervisor, Biologist*

## List of identified pollen types

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

### Identified pollen grains of nectariferous plants

Anacardiaceae	undiff. (cashew family)
Apiaceae	undiff. (carrot family)
Arecaceae	undiff. (palm trees)
Asteraceae	undiff. (daisy family)
Brassicaceae	undiff. (cabbage family)
Euphorbiaceae	Ricinus (castor oil plant)
Fabaceae	Prosopis (mesquite)
Fabaceae	Trifolium pratense (red clover)
Lamiaceae	undiff. (mint family)
Myrtaceae	Eucalyptus (gum)
Myrtaceae	undiff. (myrtle family)

### Identified pollen grains of nectarless plants

Poaceae	undiff. (grasses)
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**ANALYSIS REPORT No. 2010050231**

**DATE: 05.10.2020**

**PAGE 1/1**

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<b>Our reference no.</b>	<b>: PI2010010086</b>		
Product	: Honey		
Sample description / Batch	: <b>DS051C151</b>		
Sample received on / transported by	: 01.10.2020 via Parcel service	Seal	: none
Sample temp. when received / stored	: RT	Sampling	: Client
Packaging / Quantity	: Plastic container / ca. 100g	Start / End of analysis	: 02.10.2020 / 05.10.2020

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**ANALYSIS REQUESTED: Screening for specific marker - rice syrup by LC-MS/MS (SM-R) (101604)**

Parameter	Result	Unit	Method
SM-R (rice syrup)	negative		PM DE01.190:2012-09 (a) <sup>1</sup>

(a) : accredited method. (na) : not accredited method. (1) Inhouse procedure  
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**Interpretation:**

The result does not indicate an unauthorized addition of rice syrup in the investigated honey sample.

Hauke Zinow  
*Responsible Scientist, Certified Food Chemist*

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<b>Our reference no.</b>	: <b>PI2010010086</b>		
Product	: Honey		
Sample description / Batch	: <b>DS051C151</b>		
Sample received on / transported by	: 01.10.2020 via Parcel service	Seal	: none
Sample temp. when received / stored	: RT	Sampling	: Client
Packaging / Quantity	: Plastic container / ca. 100g	Start / End of analysis	: 02.10.2020 / 05.10.2020

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

Parameter	Result	Unit	Method
Protein	-26.34	d13C(‰)	PM DE01.026:2019-05 (a) <sup>1</sup>
Honey	-26.62	d13C(‰)	PM DE01.026:2019-05 (a) <sup>1</sup>
Fructose (F)	-26.44	d13C(‰)	PM DE01.094:2019-05 (a) <sup>2</sup>
Glucose (G)	-26.77	d13C(‰)	PM DE01.094:2019-05 (a) <sup>2</sup>
Disaccharides	-27.25	d13C(‰)	PM DE01.094:2019-05 (a) <sup>2</sup>
Trisaccharides	-26.12	d13C(‰)	PM DE01.094:2019-05 (a) <sup>2</sup>
Oligosaccharides	n.a.	d13C(‰)	PM DE01.094:2019-05 (a) <sup>2</sup>
Delta d13C (F-G)	0.33	d13C(‰)	PM DE01.094:2019-05 (a) <sup>2</sup>
Delta d13C (max.)	-1.13	d13C(‰)	PM DE01.094:2019-05 (a) <sup>2</sup>
C4 Sugar Content	0.00	%	PM DE01.026:2019-05 (a) <sup>1</sup>
F/G Ratio	1.18		PM DE01.094:2019-05 (a) <sup>2</sup>
Portion of Disaccharides	6.17	%	PM DE01.094:2019-05 (a) <sup>3</sup>
Portion of Trisaccharides	1.22	%	PM DE01.094:2019-05 (a) <sup>3</sup>
Portion of Oligosaccharides	n.d.	%	PM DE01.094:2019-05 (a) <sup>3</sup>
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 %; 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).

Ulrike Burmester  
 Dept. Head Authenticity, Chemical Engineer