

QSI GmbH - Flughafendamm 9a - D-28199 Bremen

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ITALY

Date: 23-Jul-2019

Customer No.:	11770	Sample No.:	189915
Product:	Honig/Honey		
Label: Lot. AR901			
Arrival Date:	19-Jul-2019	Start / End of Analysis:	19-Jul-2019 / 23-Jul-2019
Kind:	Orange	Packaging:	Glas 200 ml
Seal:	unverletzt/intact	Temp.:	RT

VA40262 (2019-02) Adulteration, Isotope analysis, 13C-EA-IRMS (AOAC 998.12, mod.^) + LC-IRMS (C4/C3-sugar)*, Honey**

Parameter	Method	Unit	Target Value****	Result
Protein (P)	AOAC 998.12	d-13C‰		-24,41
Honey (H)	AOAC 998.12	d-13C‰		-24,36
Fructose (F)	LC-IRMS	d-13C‰		-24,64
Glucose (G)	LC-IRMS	d-13C‰		-24,80
Disaccharides	LC-IRMS	d-13C‰		-22,78
Relative Percentage of Dissacharides*	LC-IRMS	%		9,44
Trisaccharide	LC-IRMS	d-13C‰		-23,89
Relative Percentage of Trisaccharides*	LC-IRMS	%		1,7
Oligosaccharides	LC-IRMS	d-13C‰		n.b.
Relative Percentage of Oligosaccharides*	LC-IRMS	%		n.n.
Difference d-13C Fructose-Glucose (F-G)	LC-IRMS	d-13C‰	- 1 to + 1	+0,16
Difference d-13C (max.) all sugar fractions	LC-IRMS	d-13C‰	<= 2,5	2,02
Difference Protein-Honey (P-H)	AOAC 998.12	d-13C‰		-0,05
C4-sugar-content**	AOAC 998.12	%	<= 7,00	0,30

Accredited method

n.b.: not determinable n.n.: not detectable (<= 1 % (relative) related to all sugar fractions LC-IRMS)

* related to all sugar fractions LC-IRMS; ** related to average d13C value of corn syrup of -9.7 ‰ vs. V-PDB Standard

*** Apidologie for LC-IRMS (2008, Volume 39, Issue 5, pp 574-587); **** QSI-criterion authentic honey: all target values passed

^ Weighing, sample preparation, determination of carbon isotopes, for honey and protein

Conclusion:

In our opinion, considering current scientific research, the determined results do not indicate that the honey is adulterated with foreign sugars.


Annika Hoffmann
Test Manager
Food Chemist



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This examination is the basis for special decision guidance.

The test results are exclusively related to the items tested for this sample in the above mentioned time frame for analysis. Method and measurement uncertainty details are available upon request. This report is allowed to be copied completely and unchanged but not in extracts.

Test Report No.: 210-410042 Version 0

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