

# Test Report No. 210-1095163

QSI GmbH - Flughafendamm 9a - D-28199 Bremen

Medino d.o.o. Krnjevo  
Ivan Grujic  
Bulevar Oslobođenja 29  
11319 Krnjevo  
SERBIA

Date: 03-Apr-2023

<b>Customer No.:</b>	<b>11802</b>	<b>Sample No.:</b>	<b>462132</b>
Product:	Honig/Honey		
<b>Label: 200323</b>			
Arrival Date:	28-Mar-2023	Start / End of Analysis:	28-Mar-2023 / 03-Apr-2023
Kind/Origin:	Serbia Floral	Packaging:	Glas / glass
Seal:	ohne/without	Temp.:	RT

## VA52000 (2022-04) Aer. mesoph. plate count, Enterob., E. coli, Salmo./25g, Moulds, Yeasts, Microbiology

Parameter	Method	Result
Aerobic mesophilic plate count, CFU/g	L 00.00-88/1	<100
Enterobacteriaceae, CFU/g	L 00.00-133/2	<10
Escherichia coli, CFU/g	L 00.00-132/2	<10
Salmonellae /25g	L 00.00-20 mod.	negativ/negative
Moulds, CFU/g	ISO 21527-2	<100
Yeasts, CFU/g	ISO 21527-2	<100

Subcontracting of test not accredited at QSI to laboratory within the Tentamus Group accredited for this test

Comment to the result: < 10 = tested microorganism not detectable in a dilution of the sample 1:10, < 100 in a dilution 1:100 and so on.

Quality Services International GmbH

Version 0

Isabel Tipke




Isabel Tipke  
Test Manager  
Food Chemist

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. Furthermore, as well as for statements regarding conformity our General Terms and Conditions of Business are applicable.

Test Report No.: 210-1095163 Version 0

Page: 1 of 1

# Test Report No. 210-1095161

QSI GmbH - Flughafendamm 9a - D-28199 Bremen

Medino d.o.o. Krnjevo  
 Ivan Grujic  
 Bulevar Oslobođenja 29  
 11319 Krnjevo  
 SERBIA

Date: 31-Mar-2023

<b>Customer No.:</b>	<b>11802</b>	<b>Sample No.:</b>	<b>462132</b>
Product:	Honig/Honey		
<b>Label: 200323</b>			
Arrival Date:	28-Mar-2023	Start / End of Analysis:	28-Mar-2023 / 31-Mar-2023
Kind/Origin:	Serbia Floral	Packaging:	Glas / glass
Seal:	ohne/without	Temp.:	RT

## VA220 (2022-06) Botanical and geographical Origin, compliance with EC-Honey Directive

Parameter (Method)	Unit	Result
Electr.conductivity(ASU L 40.00-5, 2021-11, mod <sup>^</sup> )	mS/cm	0,24
rel.frequency of pollen(ASU L 40.00-11, 2003-12, mod. <sup>^^</sup> )		
Predominant pollen 1	%	keine/none
Predominant pollen 2	%	keine/none
Secondary pollen 1	%	keine/none
Secondary pollen 2	%	keine/none
Secondary pollen 3	%	keine/none
Minor pollen 1	%	12 Pirus/Prunus (Obst, Fruit Blossom)
Minor pollen 2	%	12 Salix sp. (Weiden, Willow); 08 Brassicaceae (Kreuzblütler, Crucifers); 07 Robinia pseudoacacia (Falsche Akazie, False Acacia) u.r.; 05 Amorpha fruticosa (Bastardindigo, false Indigo)
Minor pollen 3	%	03 Ambrosia (Traubenkraut, Ragweed) (P)

Identified pollentypes	Apiaceae (Doldenblütler, Umbellifers) Helianthus (Sonnenblumen, Sunflower) -Type Cornus spec. (Hartriegel, Dogwood) Xanthium (Spitzklette) (P) Taraxacum (Löwenzahn, Dandelion) -Type u.r. Poaceae (Süßgräser, Grasses) (P) Melilotus (Steinklee, Sweet Clover) Aster-Type Artemisia (Beifuß, Mugwort) -Type (P) Aesculus (Roßkastanie, Horse-Chestnut) Trifolium pratense (Rotklee, Red Clover) Vicia (Wicken, Vetch) -Type Rumex (Ampfer, Sorrel) (P) Acer spec. (Ahorn, Maple) Rhamnaceae (Kreuzdorngewächse, Buckthorn-Family) Sinapis (Senf, Mustard) -Type Fraxinus (Esche) -Type (P) Lotus sp. (Hornklee, Trefoil) ü.r. unidentified pollen-types Galium (Labkraut, Cleavers) -Type Gleditsia (Gleditsie, Honey locust) -Type Fragaria (Erdbeer, Strawberry) -Type Tilia (Linden) u.r. Vitaceae (Weinrebengewächse) (P) Hedera (Efeu, Ivy) -Type Filipendula (Mädesüß, Meadow Sweet) (P) Plantaginaceae (Wegerichgewächse, Plantain) (P)
HD-Elements, fungal spores *	wenige/few
HD-Elements, waxwool *	keine/none
HD-Elements, waxstrings *	keine/none
Yeastcontent, estimation (VA 262)	mittel /medium
Starchgrains ** (VA 268)	gering/low (=<10%)
Other solid constituents	honigtypisch/honey-specific, kristalline Masse/crystalline mass
Conclusion: Type of honey, HoneyDir., Art.1, Annex I	Blüten / Blossom
<b>Conclusion: Botanical origin, HoneyDirective., Art 2</b>	<b>Blüten / Blossom</b>
Conclusion: Geographical origin	Südosteuropa (Serbien möglich) / Southeasteupe (Serbia possible)
Odour (ASU L 00.90-6, 2015-06, mod.^^^)	trachttypisch / source-specific
Flavour (ASU L 00.90-6, 2015-06, mod.^^^)	trachttypisch / source-specific
Colour (ASU L 00.90-6, 2015-06, mod.^^^)	trachttypisch / source-specific
Consistency (ASU L 00.90-6, 2015-06, mod.^^^)	flüssig / liquid

## Accredited method

u.r. = underrepresented; ü.r. = overrepresented; k = counted without pollen from nectarless plants (P)

\*HD = Honeydew; \*\*Starchgrains in % per 300 pollen- and starchgrains counted

^Weighing, ^^Adjustment in volume and temperature, ^^Matrix: only Honey

The expanded relative measurement uncertainty is 10 % (electr. conductivity) (coverage factor k=2.58; confidence interval 99 %) without taking the sampling into account.

## Conclusion:

Based on the results determined within this analysis the honey can be classified as Blüten / Blossom honey according to current EC Directive for honey.

Based on the above determined characteristics a declaration as Blüten / Blossom honey is in accordance with Art. 2 (2b) of the current EC-Honey Directive.

A declaration of the geographical origin Südosteuropa (Serbien möglich) / Southeasteuropa (Serbia possible) is consistent with the above determined pollen spectrum given current scientific research

Quality Services International GmbH

Version 0



Katja Bohm  
Test Manager  
Food Chemist

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. Furthermore, as well as for statements regarding conformity our General Terms and Conditions of Business are applicable.

Test Report No.: 210-1095161 Version 0

Page: 3 of 3

# Test Report No. 210-1095160

QSI GmbH - Flughafendamm 9a - D-28199 Bremen

Medino d.o.o. Krnjevo  
 Ivan Grujic  
 Bulevar Oslobođenja 29  
 11319 Krnjevo  
 SERBIA

Date: 30-Mar-2023

<b>Customer No.:</b>	<b>11802</b>	<b>Sample No.:</b>	<b>462132</b>
Product:	Honig/Honey		
<b>Label: 200323</b>			
Arrival Date:	28-Mar-2023	Start / End of Analysis:	28-Mar-2023 / 30-Mar-2023
Kind/Origin:	Serbia Floral	Packaging:	Glas / glass
Seal:	ohne/without	Temp.:	RT

## VA161 (2022-12) Tradeanalysis: Moisture, HMF, Diastase (Schade method), pH, Acidity, Honey-Directive

Parameter	Method	Unit	Result
Moisture	ASU L40.00-2/1, 2019-07	%	17,3
HMF (Hydroxymethylfurfural)	ASU L 40.00-10/1, 2021-11	mg/kg	8,3
Diastase activity	ASU L 40.00-1, 2019-07 mod.^	DN Schade	15,6
pH-value	ASU L 40.00-6, 2011-06		4,1
Acidity*	ASU L 40.00-6, 2011-06	meq/kg	12,5
Accordance with EC Honey Directive			Honig/honey

Accredited method

\* if acidity is < 17 (or < 10 in specific honey types), proline content will be determined automatically

^Weighing and amount of buffer; adaptation to Random Access Analyzer

The expanded relative measurement uncertainty is 0.8 % (Moisture); 9 % (HMF); 12 % (Diastase); 0.5 % (pH-value); 10 % (acidity) (coverage factor k=2.58; confidence interval 99 %) without taking the sampling into account.

### Conclusion:

The determined values are in accordance with the requirements of Council Directive 2001/110/EC Annex II of 20. December 2001 relating to Honig/honey.



Jürgen Wehlitz  
Test Manager  
Food Chemist

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. Furthermore, as well as for statements regarding conformity our General Terms and Conditions of Business are applicable.

Test Report No.: 210-1095160 Version 0

Page: 2 of 2

# Test Report No. 210-1095162

QSI GmbH - Flughafendamm 9a - D-28199 Bremen

Medino d.o.o. Krnjevo  
 Ivan Grujic  
 Bulevar Oslobođenja 29  
 11319 Krnjevo  
 SERBIA

Date: 30-Mar-2023

<b>Customer No.:</b>	<b>11802</b>	<b>Sample No.:</b>	<b>462132</b>
Product:	Honig/Honey		
<b>Label: 200323</b>			
Arrival Date:	28-Mar-2023	Start / End of Analysis:	28-Mar-2023 / 30-Mar-2023
Kind/Origin:	Serbia Floral	Packaging:	Glas / glass
Seal:	ohne/without	Temp.:	RT

## VA40262 (2022-09) Authenticity, Isotope analysis, 13C-EA-IRMS (AOAC 998.12, mod.^) + 13C-LC-IRMS (C4/C3-sugar)\*\*\*, Honey

Parameter	Method	Unit	Target Value****	Result
Protein (P)	AOAC 998.12	d-13C‰		-24,54
Honey (H)	AOAC 998.12	d-13C‰		-25,00
Fructose (F)	LC-IRMS	d-13C‰		-24,79
Glucose (G)	LC-IRMS	d-13C‰		-24,60
Disaccharides	LC-IRMS	d-13C‰		-24,52
Relative Percentage of Disaccharides*	LC-IRMS	%		9,42
Trisaccharide	LC-IRMS	d-13C‰		-23,14
Relative Percentage of Trisaccharides*	LC-IRMS	%		2,59
Oligosaccharides	LC-IRMS	d-13C‰		n.b.
Relative Percentage of Oligosaccharides*	LC-IRMS	%		n.n.
F/G ratio	LC-IRMS			1,31
Difference d-13C Fructose-Glucose (F-G)	LC-IRMS	d-13C‰	- 1 to + 1	-0,19
Difference d-13C (max.) all sugar fractions	LC-IRMS	d-13C‰	<= 2,50	1,65
Difference Protein-Honey (P-H)	AOAC 998.12	d-13C‰		+0,46
C4-sugar-content**	AOAC 998.12	%	<= 7,00	0,00

## Accredited method

n.b.: not determinable n.n.: not detectable ( $\leq 1\%$  (relative) related to all sugar fractions LC-IRMS); LC-IRMS is not an official method for F/G ratio

\* related to all sugar fractions LC-IRMS; \*\* related to average d13C value of corn syrup of  $-9.7\text{‰}$  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

The expanded relative measurement uncertainty is  $3\%$  (coverage factor  $k=2.58$ ; confidence interval  $99\%$ ) without taking the sampling into account.

## Conclusion:

The values determined in the course of the investigation carried out correspond to the QSI criteria for authentic honey and, in our opinion and according to current scientific knowledge, do not indicate the addition of foreign sugars. With regard to the investigated parameters the honey corresponds to the legal regulations (EU Honey directive 2001/110/EC, Annex 2 Part 1).

Quality Services International GmbH

Version 0



Jürgen Wehlitz  
Test Manager  
Food Chemist

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. Furthermore, as well as for statements regarding conformity our General Terms and Conditions of Business are applicable.

Test Report No.: 210-1095162 Version 0

Page: 2 of 2



# Test Report No. 210-1095159

QSI GmbH - Flughafendamm 9a - D-28199 Bremen

Medino d.o.o. Krnjevo  
Ivan Grujic  
Bulevar Oslobođenja 29  
11319 Krnjevo  
SERBIA

Date: 28-Mar-2023

<b>Customer No.:</b>	<b>11802</b>	<b>Sample No.:</b>	<b>462132</b>
Product:	Honig/Honey		
<b>Label: 200323</b>			
Arrival Date:	28-Mar-2023	Start / End of Analysis:	28-Mar-2023 / 28-Mar-2023
Kind/Origin:	Serbia Floral	Packaging:	Glas / glass
Seal:	ohne/without	Temp.:	RT

## 984302/984304 Thermo VA177 Enzymatic Test for Determination of Fructose/Glucose in homogenous liquid samples with Random Access Analyzer

Parameter	Unit	Result
Fructose	g/100g	39,4
Glucose	g/100g	28,8
F/G-ratio		1,37
Sum Fructose+Glucose	g/100g	68,2

Accredited method

n.n. = below loq (=0,1g/100g)

The expanded relative measurement uncertainty is 4 % (Fructose); 5 % (Glucose); 9 % (F/G) (coverage factor k=2.58; confidence interval 99 %) without taking the sampling into account.

Quality Services International GmbH

Version 0

  
 Annika Wessels  
 Test Manager  
 Food Chemist



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. Furthermore, as well as for statements regarding conformity our General Terms and Conditions of Business are applicable.

Test Report No.: 210-1095159 Version 0

Page: 1 of 1