

CERTIFICATE OF ANALYSIS

Document No.: VLG-QA-COA-CZ5494.2 Rev.: 01

SECTION 1 · PRODUCT SPECIFICATION

Product Name	Vilgain Forest Blossom Honey 720 g
PV Number	38480
Category	Seasoning & Sweeteners; Honey
Batch No.	CZ5494

SECTION 2 · LABORATORY TEST RESULTS

A. Sugar Profile (NMR)

Parameter	Unit	Result	TZ
Fructose	g/100 g	37.7	SA
Glucose	g/100 g	34.3	SA
Fructose / Glucose ratio	—	1.10	SA
Glucose + Fructose	g/100 g	72.0	SA
Sucrose	g/100 g	< 0.5	SA
Turanose	g/100 g	1.52	SA

B. Organic Acids & Related Compounds (NMR)

Parameter	Unit	Result	TZ
Citric acid	mg/kg	199	SA
Ethanol	mg/kg	7	SA
Acetic acid	mg/kg	20	SA
Lactic acid	mg/kg	73	SA
Succinic acid	mg/kg	54	SA
Proline	mg/kg	411	SA
Mannose	mg/kg	< 500	SA
Dihydroxyacetone	mg/kg	< 20	SA

C. Authenticity — Isotope Ratio Mass Spectrometry (IRMS)

Parameter	Unit	Result	TZ
Delta 13C (Raw product /V-PDB)	‰	-26.4	SA
Delta 13C (/V-PDB)	‰	-26.0	SA

Parameter	Unit	Result	TZ
Delta 13C (Protein /V-PDB)	‰	-26.0	SA
Delta 13C (Honey /V-PDB)	‰	-25.9	SA
Delta 13C (Fructose /V-PDB)	‰	-25.85	SA
Delta 13C (Glucose /V-PDB)	‰	-25.79	SA
Delta 13C (Disaccharides /V-PDB)	‰	-26.78	SA
Delta 13C (Trisaccharides /V-PDB)	‰	-25.81	SA
Delta 13C (Oligosaccharides /V-PDB)	‰	n.a.	SA
Delta 13C (F–G)	‰	-0.06	SA
Delta 13C (max.)	‰	0.99	SA
C4 sugar (IRMS)	%	0.60	SA
C4 sugar (AOAC 998.12, calculation)	%	0.0	SA
Disaccharides, rel. to total sugar content	%	8.65	SA
Trisaccharides, rel. to total sugar content	%	5.07	SA
Oligosaccharides, rel. to total sugar content	%	n.d.	SA
F/G ratio	—	1.04	SA

D. Enzymatic Activity & Profiling

Parameter	Unit	Result	TZ
Diastase activity	Schade	13.9	SA
Spectral fingerprint (NMR profiling)	—	see conclusion	SA

E. Pesticide Residues — Glyphosate Group (LC-MS/MS)

Parameter	Unit	Result	TZ
Aminomethylphosphonic acid (AMPA)	mg/kg	< 0.01	SA
Glufosinate-ammonium	mg/kg	< 0.01	SA
Glufosinate	mg/kg	< 0.01	SA
Glyphosate	mg/kg	< 0.01	SA
MPPA	mg/kg	< 0.01	SA
N-Acetyl-Glufosinate	mg/kg	< 0.01	SA

SECTION 3 · ANALYTICAL METHOD SUMMARIES

Testing laboratory: Eurofins Food & Feed Testing Czech Republic s.r.o., Zkušební laboratoř EUROFINS CZ, Radiová 1285/7, 102 00 Praha 10 – Hostivař, Czech Republic, IČO: 27449408.

All analyses were conducted by an accredited testing laboratory (tests within the accreditation scope of EUROFINS CZ, or subcontracted within an accredited scope — see TZ column: A / SA).

Methods applied:

- Gravimetry (SOP MB.005.PB) — determination of sample weight.
- LC-MS/MS (Internal Method – Own Method, W3309 / W3302) — determination of glyphosate and related residues (AMPA, glufosinate, glufosinate-ammonium, MPPA, N-acetyl-glufosinate).
- NMR (Internal Method 1, T-AA52-WO44581) — honey NMR profiling; determination of sugars, organic acids and other authenticity markers.
- IRMS (Internal Method ICS SOP 520-13 / 520-14; ref. Apidologie 39 (2008) 574–587) — carbon isotope ratio analysis (delta 13C) for detection of added C4 sugar.
- Refractometry (Internal Method 1, T-AA11-WO2572) — determination of moisture content.

- Spectrophotometry (SOP CH_12_DIAST) — determination of diastase activity.
- Calculation per AOAC 998.12 — C4 sugar content.

Source analytical reports: AR-26-HD-023575-01 (issued 03.07.2026) and AR-26-HD-015883-01 (issued 07.05.2026), Eurofins Food & Feed Testing Czech Republic s.r.o.

SECTION 4 • CONCLUSION & LEGISLATIVE EVALUATION

- NMR profiling did not reveal any sugar addition with reference to the laboratory's database of authentic samples.
- The relationship between delta 13C (protein/V-PDB) and delta 13C (honey/V-PDB) does not indicate addition of sugar derived from C4 plants (cane or maize), in accordance with AOAC official method 998.12 for honey analysis.
- The measured diastase activity (13.9 Schade) complies with the requirements of Czech Decree No. 76/2003 Coll.
- The sample corresponds to the legal requirements for pure honey set out in Council Directive 2001/110/EC relating to honey (Article 1 and Annex II).
- Residues of glyphosate and related compounds (AMPA, glufosinate, glufosinate-ammonium, MPPA, N-acetyl-glufosinate) were all below the limit of quantification (LOQ 0.01 mg/kg); the sample complies with the maximum residue limits set out in Regulation (EC) No 396/2005.

Overall conclusion: Based on the analyses performed, batch CZ5494 of Vilgain Forest Blossom Honey 720 g meets the applicable legal and quality requirements evaluated above.

Place & Date:

Brno, Czech Republic, 14 July 2026

Quality Department

Vilgain s.r.o.

This Certificate of Analysis is issued exclusively for the batch number stated above. Results apply solely to the items tested. All analyses were conducted by accredited third-party laboratories. Document issued by Vilgain s.r.o., Brno, Czech Republic.