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CERTIFICATE OF ANALYSIS

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Attention: Ludek Ulvr
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Lab Reference: 25-14979
Submitted by:
Date Received: 22/05/2025
Testing Initiated: 22/05/2025
Date Completed: 29/08/2025
Order Number:
Reference:

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at ALS NZ (or at the subcontracted laboratories, when applicable).
Samples were in acceptable condition unless otherwise noted on this report.
Specific testing dates are available on request.

AMENDED REPORT. This report replaces in full a previous version Summary-[R00] sent on 26/05/2025. Amended sample ID as requested.

Results Summary

		Client Sample ID	707255
		Laboratory ID	25-14979-2
Analyte	Unit	Reporting Limit	Result
MPI Manuka Classification for Honey*			
MPI Manuka Classification*			MULTIFLORAL MANUKA
MPI Manuka DNA in Honey			
Manuka DNA	Cq		29.19
MPI Manuka Markers in Honey			
4-Hydroxyphenyllactic acid (4-HPLA)	mg/kg	0.80	2.0
2-Methoxybenzoic acid (2-MBA)	mg/kg	0.80	3.8
2'-Methoxy acetophenone (2'-MAP)	mg/kg	0.80	1.6
3-Phenyllactic acid (3-PLA)	mg/kg	20	370
3in1 in Honey			
Dihydroxyacetone (DHA)	mg/kg	40	254
Methylglyoxal (MG/MGO)	mg/kg	8	92
Non-Peroxide Activity* (NPA)	%w/v phenol eq.	1.3	5.3
Hydroxymethylfurfural (HMF)	mg/kg	1	9.4

Josh Bublitz, BSc
Technician

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Technologist

Rajmesh (Raj) Gounder, Dipl. T.
Laboratory Technician

Method Summary

3in1 Determination of Dihydroxyacetone (DHA), Methylglyoxal (MG/MGO) and Hydroxymethylfurfural (HMF) by aqueous extraction, derivatisation, and UPLC (diode array) analysis in accordance with in-house procedures.

Method Summary

NPA

Non-Peroxide Activity (NPA) values are not directly measured by the laboratory, but are calculated from the measured methylglyoxal concentration in the honey according to the requirements of the client. The calculation is based on published data(†) comparing the NPA and methylglyoxal concentration measured in a range of honey samples. These calculated values are not accredited by IANZ and do not imply that the honey is or is not manuka honey.
NPA values less than 5 are an estimate based on extrapolation of the relationship between methylglyoxal and NPA

(†) Isolation by HPLC and characterisation of the bioactive fraction of New Zealand manuka (Leptospermum scoparium) honey. C. J. Adams, et al. Carbohydrate Research 343 (2008) 651-659. And, Corrigendum to "Isolation by HPLC and characterization of the bioactive fraction of New Zealand manuka (Leptospermum scoparium) honey" [Carbohydr. Res. 343 (2008) 651]. Carbohydrate Research 344 (2009) 2609. C. J. Adams, et al.

MPI Manuka Markers

Solvent extraction, LC-MS/MS analysis in accordance with in-house procedures.

Analytica Laboratories Ltd., is approved by the New Zealand Ministry of Primary Industries to conduct this analysis under the Recognised Laboratory Programme (MPI Technical Paper 2017/30 Modified, RLP Method 10.05)

Leptospermum scoparium DNA (PCR)

Samples were analysed as received by the Laboratory for Manuka Pollen DNA by pollen DNA extraction followed by qPCR in accordance with the MPI Technical Paper 2017/31 (modified) (96 well method with magnetic bead extraction). Analytica Laboratories Ltd., is approved by the New Zealand Ministry of Primary Industries to conduct this analysis under the Recognised Laboratory Programme (RLP Method 10.04).

The DNA component of the MPI Manuka Honey Definition requires a Cq value of less than 36 to qualify for either a monofloral or multifloral manuka honey.

An "Inconclusive" result indicates the internal control used for ensuring test quality failed. This may be due to degraded plant pollen or foreign contaminants in the sample.

MPI Manuka Classification

For classification as monofloral manuka, the following chemicals all need to be present and at these levels (Animal Products Notice - General Export Requirements for Bee Products, 2018):

- 4-hydroxyphenyllactic acid at a level greater than or equal to 1mg/kg
- 2-methoxybenzoic acid at a level greater than or equal to 1mg/kg
- 2'-methoxyacetophenone at a level greater than or equal to 5mg/kg
- 3-phenyllactic acid at a level greater than or equal to 400mg/kg

And the DNA level from manuka pollen is less than Cq 36, which is approximately 3fg/µL.

For classification as multifloral manuka, the following chemicals all need to be present and at these levels:

- 4-hydroxyphenyllactic acid at a level greater than or equal to 1mg/kg
- 2-methoxybenzoic acid at a level greater than or equal to 1mg/kg
- 2'-methoxyacetophenone at a level greater than or equal to 1mg/kg
- 3-phenyllactic acid at a level greater than or equal to 20 mg/kg but less than 400mg/kg

And the DNA level from manuka pollen is less than Cq 36, which is approximately 3fg/µL