



Certificate of Analysis

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Lab Reference: 24-31965
 Submitted by:
 Date Received: 16/10/2024
 Testing Initiated: 16/10/2024
 Date Completed: 17/10/2024
 Order Number:
 Reference:

Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories (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.

Results Summary

Client Sample ID		K024JA	
Laboratory ID		24-31965-1	
Analyte	Unit	Reporting Limit	Result
MPI Manuka Classification for Honey*			
MPI Manuka Classification*			MONOFLORAL MANUKA
MPI Manuka DNA in Honey			
Manuka DNA	Cq		31.89
MPI Manuka Markers in Honey			
4-Hydroxyphenyllactic acid (4-HPLA)	mg/kg	0.80	6.9
2-Methoxybenzoic acid (2-MBA)	mg/kg	0.80	6.7
2'-Methoxy acetophenone (2'-MAP)	mg/kg	0.80	22
3-Phenyllactic acid (3-PLA)	mg/kg	20	850
3in1 in Honey			
Dihydroxyacetone (DHA)	mg/kg	40	881
Methylglyoxal (MG/MGO)	mg/kg	8	564
Non-Peroxide Activity* (NPA)	%w/v phenol eq.	1.3	15.9
Hydroxymethylfurfural (HMF)	mg/kg	1	27.1
Tutin in Honey			
Tutin Result	mg/kg	0.01	0.01
Applicable MRL (Tutin)	mg/kg		0.70
Compliance with MRL (Tutin)			PASS
Glyphosate in Honey			
Glyphosate	mg/kg	0.010	<0.010
Glufosinate	mg/kg	0.010	<0.010
Aminomethyl phosphonic acid	mg/kg	0.010	<0.010
Glyphosate in Honey (Trace)			
Glyphosate	mg/kg	0.004	<0.0040
Glufosinate	mg/kg	0.010	<0.010
Aminomethyl phosphonic acid	mg/kg	0.010	<0.010

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited. This test report shall not be reproduced except in full, without the written permission of Analytica Laboratories.

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.
NPA	<p>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</p> <p><i>(†) 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.</i></p>
MPI Manuka Markers	<p>Solvent extraction, LC-MS/MS analysis in accordance with in-house procedures.</p> <p>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)</p>
Leptospermum scoparium DNA (PCR)	<p>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).</p> <p>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.</p>
Tutin	<p>Solvent extraction, LC-MS/MS analysis in accordance with in-house procedures.</p> <p>Analytica Laboratories Ltd., is approved by the New Zealand Ministry of Primary Industries to conduct this analysis under the Recognised Laboratory Programme (RLP Method 8.42).</p>
Tutin MRL	<p>The Maximum Residue Limit (MRL) for tutin in a single sample is 0.7 mg/kg in honey and 0.01 mg/kg in honey comb (Food (Tutin in Honey) Standard 2016). For composite samples the MRL is reduced relative to the number of samples included in the composite, as shown in the results table.</p> <p>May Not Comply = It cannot be concluded with enough confidence that the sample is compliant with the MRL, because of the experimental error associated with the analysis.</p>
MPI Manuka Classification	<p>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):</p> <ul style="list-style-type: none">• 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 <p>And the DNA level from manuka pollen is less than Cq 36, which is approximately 3fg/μL.</p> <p>For classification as multifloral manuka, the following chemicals all need to be present and at these levels:</p> <ul style="list-style-type: none">• 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 <p>And the DNA level from manuka pollen is less than Cq 36, which is approximately 3fg/μL</p>
Glyphosate	<p>Solvent extraction and FMOC derivatisation followed by 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 (RLP Method 8.47.1).</p>