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Certificate of Analysis

Client:	Cosana New Zealand Limited	**Lab No:**	3753279	HGSP-4v5
Contact:	Louie Primeau	**Date Received:**	11-Jan-2025	
	C/- Cosana New Zealand Limited	**Date Reported:**	26-Aug-2025	**(Amended)**
	PO Box 3330	**Quote No:**	130194	
	Taupo 3351	**Order No:**	SORD24712	
		Client Reference:	CSNZ14077 - DRUM RETEST	
		Submitted By:	Louie Primeau	

Sample Type: Honey

Sample Name:		CSNZ15190
Lab Number:		3753279.4
MPI Manuka Classification		
MPI Manuka Honey Classification		Monofloral Manuka Honey
3-Phenyllactic acid (3-PA)	mg/kg	1,260
2'-Methoxyacetophenone (2'-MAP)	mg/kg	50
2-Methoxybenzoic acid (2-MBA)	mg/kg	13.3
4-Hydroxyphenyllactic acid (4-HPA)	mg/kg	9.7
Manuka DNA	Cq	35.04
Manuka Honey Analysis		
Dihydroxyacetone (DHA)	mg/kg	1,207
5-Hydroxymethylfurfural (HMF)	mg/kg	36.0
Methylglyoxal (MGO)	mg/kg	1,094
Non Peroxide Activity (NPA)*	% Phenol Equivalent	23.6
Leptosperin	mg/kg	410

Analyst's Comments

Sample 4 Comment:
MPI Classification Comment:
The results presented on the Certificate of Analysis have been rounded to an appropriate number of significant figures, based on the Uncertainty of Measurement of the methods performed. The 'MPI Manuka Honey Classification' has been determined using unrounded values. In cases where one or more values were close to the critical levels (as defined by MPI), there may be a seeming inconsistency between the classification and the rounded values reported.

Amended Report: This certificate of analysis replaces report '3753279-HGSP-4v4' issued on 24-Jan-2025 at 1:47 pm. Reason for amendment: Sample name changed at the request of customer.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Honey

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
3-in-1 Honey method	Aqueous extraction, derivatisation. Analysis by uHPLC / UV-Vis (dihydroxyacetone, 5-hydroxymethylfurfural, methylglyoxal). In-house.	1.0 - 10 mg/kg	4

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Honey			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Leptosperin	Aqueous extraction, dilution, analysis by LC-MS/MS.	15 mg/kg	4
Non Peroxide Activity (NPA)*	NPA is calculated from methylglyoxal using an industry accepted correlation curve based on published data[1,2] for NPA and the primary active ingredient, methylglyoxal. [1] 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. [2] Corrigendum to "Isolation by HPLC and characterization of the bioactive fraction of New Zealand manuka (Leptospermum scoparium) honey" [Carbohydr. Res. 343 (2008) 651]. C. J. Adams, et al. Carbohydrate Research 344 (2009) 2609.	1.0 % Phenol Equivalent	4
MPI 5 Attributes Tests			
MPI Manuka Honey Classification	Evaluation of results against Ministry of Primary Industries (MPI) criteria for classification of monofloral and multifloral Manuka honey. General Export Requirements for Bee Products - 27 October 2021.	-	4
Manuka Honey Chemistry Profile			
3-Phenyllactic acid (3-PA)	Aqueous solvent extraction, dilution. LC-MS/MS analysis. MPI Technical Paper 2017/30 (modified) **RLP Official Test 10.05**.	5 mg/kg	4
2'-Methoxyacetophenone (2'-MAP)	Aqueous solvent extraction, dilution. LC-MS/MS analysis. MPI Technical Paper 2017/30 (modified) **RLP Official Test 10.05**.	0.50 mg/kg	4
2-Methoxybenzoic acid (2-MBA)	Aqueous solvent extraction, dilution. LC-MS/MS analysis. MPI Technical Paper 2017/30 (modified) **RLP Official Test 10.05**.	0.50 mg/kg	4
4-Hydroxyphenyllactic acid (4-HPA)	Aqueous solvent extraction, dilution. LC-MS/MS analysis. MPI Technical Paper 2017/30 (modified) **RLP Official Test 10.05**.	0.50 mg/kg	4
Manuka Honey PCR Profile			
Manuka DNA	Quantification of Manuka (*Leptospermum scoparium*) DNA by real time PCR. MPI Technical - Paper No: 2017/31 (modified). **RLP Official Test 10.04**.	> 36 Cq	4

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 11-Jan-2025 and 22-Jan-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Certificate of Analysis

Client:	Cosana New Zealand Limited	**Lab No:**	3756135	HTASP-1v2
Contact:	Louie Primeau	**Date Received:**	16-Jan-2025	
	C/- Cosana New Zealand Limited	**Date Reported:**	26-Aug-2025	**(Amended)**
	PO Box 3330	**Quote No:**	122734	
	Taupo 3351	**Order No:**	SORD24717	
		Client Reference:	CSNZ14077 - CSJP Batch test - Normal	
		Submitted By:	Louie Primeau	

Sample Type: Honey

Sample Name:		CSNZ15190
Lab Number:		3756135.1
Tutin Analysis		
Tutin Result Evaluation	Pass/Fail	PASS
Tutin	mg/kg	0.013
MRL as per Tutin in Honey Food Standard 2016	mg/kg	0.70

Tutin Analysis Report: This report may represent a subset of the requested tests.

Analyst's Comments

Amended Report: This certificate of analysis replaces report '3756135-HTASP-1v1' issued on 17-Jan-2025 at 11:32 am. Reason for amendment: Sample name changed at the request of customer.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Honey

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Tutin Analysis in Honey	Solvent extraction, dilution. Analysis by LC-MS/MS. Results are representative of the liquid honey, not the sample as a whole. <u>Tutin Result Evaluation (PASS/FAIL)</u> The PASS/FAIL result is based on comparison of the tutin result with the "Food Standard: Tutin in Honey (2016)". A result that falls at or BELOW the maximum permitted tutin level will give a PASS result. A result that falls ABOVE the maximum permitted tutin level will give a FAIL result. <u>Individual Sample Testing Recommended?</u> Where a tutin result for a composited sample is above the maximum permitted level, it is recommended that the individual samples are retested. Please contact the laboratory to arrange for individual sample retesting. **RLP Official Test 8.42**.	0.010 mg/kg	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 16-Jan-2025 and 17-Jan-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.

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Certificate of Analysis

Client:	Cosana New Zealand Limited	**Lab No:**	3756135	HGASP-1v2
Contact:	Louie Primeau	**Date Received:**	16-Jan-2025	
	C/- Cosana New Zealand Limited	**Date Reported:**	26-Aug-2025	**(Amended)**
	PO Box 3330	**Quote No:**	122734	
	Taupo 3351	**Order No:**	SORD24717	
		Client Reference:	CSNZ14077 - CSJP Batch test - Normal	
		Submitted By:	Louie Primeau	

Sample Type: Honey

Sample Name:		CSNZ15190
Lab Number:		3756135.1
Glyphosate Analysis		
AMPA	mg/kg	< 0.010
Glufosinate	mg/kg	< 0.010
Glyphosate	mg/kg	< 0.010

Glyphosate Analysis Report: This report may represent a subset of the requested tests.

Analyst's Comments

Amended Report: This certificate of analysis replaces report '3756135-HGASP-1v1' issued on 17-Jan-2025 at 1:58 pm. Reason for amendment: Sample name changed at the request of customer.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Honey

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Glyphosate LC-MS/MS Analysis	Aqueous extraction, Analysis by LC-MS/MS. In-house. **RLP Official Test 8.47.1**.	0.010 mg/kg	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed on 17-Jan-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Certificate of Analysis

Client:	Cosana New Zealand Limited	**Lab No:**	3756135	HMICASP-1v2
Contact:	Louie Primeau	**Date Received:**	16-Jan-2025	
	C/- Cosana New Zealand Limited	**Date Reported:**	26-Aug-2025	**(Amended)**
	PO Box 3330	**Quote No:**	122734	
	Taupo 3351	**Order No:**	SORD24717	
		Client Reference:	CSNZ14077 - CSJP Batch test - Normal	
		Submitted By:	Louie Primeau	

Sample Type: Honey

Sample Name:		CSNZ15190
Lab Number:		3756135.1
Microbiological Analysis		
Aerobic Count 35°C	cfu / g	10
Yeasts & Moulds	cfu / g	10
Total Coliforms	cfu / g	< 10
Staphylococcus aureus	cfu / g	10

Microbiological Analysis Report: This report may represent a subset of the requested tests.

Analyst's Comments

Amended Report: This certificate of analysis replaces report '3756135-HMICASP-1v1' issued on 20-Jan-2025 at 3:21 pm. Reason for amendment: Sample name changed at the request of customer.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Honey

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Aerobic Count 35°C	Automated MPN count on TEMPO AC, Incubated at 35°C for 22-28 hours. bioMérieux, TEMPO.	10 cfu / g	1
Total Coliforms	Automated MPN count on TEMPO TC, incubated at 35°C for 24-27 hours. bioMérieux, TEMPO.	10 cfu / g	1
Staphylococcus aureus	Automated MPN count on TEMPO STA, Incubated at 35°C for 24-27 hours. bioMérieux, TEMPO.	10 cfu / g	1
Yeasts & Moulds	Automated MPN count on TEMPO YM, Incubated at 25°C for 72-76 hours. bioMérieux, TEMPO.	10 cfu / g	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 18-Jan-2025 and 20-Jan-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Certificate of Analysis

Client:	Cosana New Zealand Limited	**Lab No:**	3756135	HAFBSP-1v2
Contact:	Louie Primeau	**Date Received:**	16-Jan-2025	
	C/- Cosana New Zealand Limited	**Date Reported:**	26-Aug-2025	**(Amended)**
	PO Box 3330	**Quote No:**	122734	
	Taupo 3351	**Order No:**	SORD24717	
		Client Reference:	CSNZ14077 - CSJP Batch test - Normal	
		Submitted By:	Louie Primeau	

Sample Type: Honey

Sample Name:	CSNZ15190
Lab Number:	3756135.1
American Foulbrood Analysis	
American Foulbrood (AFB)	Not Detected
American Foulbrood (AFB) Spores and/or cells per g	< 92

American Foulbrood Analysis Report: This report may represent a subset of the requested tests.

Analyst's Comments

Sample 1 Comment:
AFB Comment:
Please note: The result of "Not Detected" could include situations where late amplification of the AFB marker was seen, past the limit of detection (LOD) of the assay (i.e. 1-91 cells and/or spores per g).

Amended Report: This certificate of analysis replaces report '3756135-HAFBSP-1v1' issued on 17-Jan-2025 at 3:50 pm.
Reason for amendment: Sample name changed at the request of customer.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request.
Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Honey

Test	Method Description	Default Detection Limit	Sample No
American Foulbrood Profile			
American Foulbrood (AFB)	Quantification of Paenibacillus larvae, causative agent of American foulbrood (AFB), using real time PCR analysis. **RLP Official Test 2.14**.	92 Spores and/or cells per g	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed on 17-Jan-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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