



## Certificate of Analysis

<b>Client:</b>	Herbex Limited	<b>Lab No:</b>	2135103	SPV1
<b>Contact:</b>	Gerhard Stemmler C/- Herbex Limited PO Box 516 LAUTOKA FIJI	<b>Date Received:</b>	04-Mar-2019	
		<b>Date Reported:</b>	14-Mar-2019	
		<b>Quote No:</b>	51670	
		<b>Order No:</b>		
		<b>Client Reference:</b>		
		<b>Submitted By:</b>	Gerhard Stemmler	

### Sample Type: Fruit (juice)

Sample Name:		Noni Fruit Juice				
Lab Number:		2135103.1				
Dry Matter	g/100g as rcvd	6.4	-	-	-	-
Moisture	g/100g as rcvd	94	-	-	-	-
Ash	g/100g as rcvd	0.70	-	-	-	-
Total Nitrogen	g/100g as rcvd	0.108	-	-	-	-
Total Protein	g/100g as rcvd	0.68	-	-	-	-
Total Fat*	g/100g as rcvd	< 0.10	-	-	-	-
Saturated Fat*	g/100g as rcvd	< 0.10	-	-	-	-
Total Carbohydrate*	g/100g as rcvd	5.0	-	-	-	-
Soluble Carbohydrate (Sugars)*	g/100g as rcvd	3.4	-	-	-	-
Energy*	kJ/100g	97	-	-	-	-
Energy*	Cal/100g	23	-	-	-	-
Potassium*	mg/100g as rcvd	360	-	-	-	-
Sodium*	mg/100g as rcvd	12.2	-	-	-	-
Patulin*	mg/kg as rcvd	< 0.010	-	-	-	-
Antimony*	mg/kg as rcvd	< 0.010	-	-	-	-
Arsenic*	mg/kg as rcvd	< 0.010	-	-	-	-
Bismuth*	mg/kg as rcvd	< 0.0010	-	-	-	-
Cadmium*	mg/kg as rcvd	0.0009	-	-	-	-
Copper*	mg/kg as rcvd	0.63	-	-	-	-
Lead*	mg/kg as rcvd	0.0049	-	-	-	-
Mercury*	mg/kg as rcvd	< 0.0010	-	-	-	-
Silver*	mg/kg as rcvd	< 0.0010	-	-	-	-
Tin*	mg/kg as rcvd	< 0.005	-	-	-	-
Total Heavy Metals*	mg/kg as rcvd	0.65	-	-	-	-

### Analyst's Comments

Appendix No.1 - Fat Report

Appendix No.2 - Patulin Report

## 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 clean 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. Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Fruit (juice)			
Test	Method Description	Default Detection Limit	Sample No
Dry Matter	Drying for 16 hours at 103°C, gravimetry. AOAC 945.15, 19th Edition.	0.10 g/100g as rcvd	1
Moisture	Drying for 16 hours at 103°C, gravimetry. AOAC 945.15, 20th Edition.	0.10 g/100g as rcvd	1



Sample Type: Fruit (juice)			
Test	Method Description	Default Detection Limit	Sample No
Ash	Ignition in muffle furnace 600°C, 6 hours, gravimetry. AOAC 942.05, 20 <sup>th</sup> Edition.	0.10 g/100g as rcvd	1
Total Nitrogen	Dumas combustion. AOAC 992.15, 19th edition.	0.002 g/100g as rcvd	1
Total Protein	Calculation: Total Nitrogen x 6.25. AOAC 992.15, 19th edition.	0.010 g/100g as rcvd	1
FAME Extraction and Analysis*	Subcontracted test, Cawthron Institute, Nelson.	-	1
Total Fat*	Subcontracted test, Cawthron Institute, Nelson.	0.10 g/100g as rcvd	1
Saturated Fat*	Subcontracted test, Cawthron Institute, Nelson.	0.02 g/100g as rcvd	1
Total Carbohydrate*	Calculation by difference: 100 - (Moisture + Ash + Total Protein + Total Fat). Paul, A.A and Southgate, D.A. The Composition of Foods. 4 <sup>th</sup> Edition, 1978.	1.0 g/100g as rcvd	1
Soluble Carbohydrate (Sugars)*	80% aq. ethanol extraction, phenol/sulphuric colorimetry, sucrose standards. Journal of Science of Food and Agriculture; 1999, 79, 2079.	0.0010 g/100g as rcvd	1
Energy*	Calculation: (Total Protein x 17) + (Total Fat x 37) + (Total Carbohydrate x 17). Factors are applicable to human metabolism only. Food Standards Australia New Zealand, Standard 1.2.8: Nutrition Information Requirements.	10 kJ/100g	1
Energy*	Calculation: Sum of [(Total Protein x 17) + (Total Fat x 37) + (Total Carbohydrate x 17)] / 4.18. Factors are applicable to human metabolism only. Food Standards Australia New Zealand, Standard 1.2.8: Nutrition Information Requirements.	2 Cal/100g	1
Biological Materials Digestion*	Nitric and hydrochloric acid micro digestion, filtration.	-	1
Potassium*	Biological materials digestion. Analysis by ICP-OES.	0 mg/100g as rcvd	1
Sodium*	Biological materials digestion. Analysis by ICP-OES.	0.5 mg/100g as rcvd	1
Patulin*	Solvent extraction, SPE cleanup, LC-MS/MS analysis. Subcontracted test,ASUREQuality, Wellington.	0.010 mg/kg as rcvd	1
Antimony*	Biological materials digestion. Analysis by ICP-MS.	0.010 mg/kg as rcvd	1
Arsenic*	Biological materials digestion. Analysis by ICP-MS.	0.010 mg/kg as rcvd	1
Bismuth*	Biological materials digestion. Analysis by ICP-MS.	0.0010 mg/kg as rcvd	1
Cadmium*	Biological materials digestion. Analysis by ICP-MS.	0.0004 mg/kg as rcvd	1
Copper*	Biological materials digestion. Analysis by ICP-MS.	0.005 mg/kg as rcvd	1
Lead*	Biological materials digestion. Analysis by ICP-MS.	0.0010 mg/kg as rcvd	1
Mercury*	Biological materials digestion. Analysis by ICP-MS.	0.0010 mg/kg as rcvd	1
Silver*	Biological materials digestion. Analysis by ICP-MS.	0.0010 mg/kg as rcvd	1
Tin*	Biological materials digestion. Analysis by ICP-MS.	0.005 mg/kg as rcvd	1
Total Heavy Metals*	Calculation: sum of individual metals (antimony, arsenic, bismuth, cadmium, copper, lead, mercury, silver, tin). Heavy Metals Test (as lead sulfide), Food Chemicals Codex 4 <sup>th</sup> Edition, 1996 (modified - ICP-MS analysis).	0.10 mg/kg as rcvd	1

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

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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



Mark Bryant NZCS (Chemistry)  
Senior Technologist - Food & Bioanalytical



Cawthron Analytical Science  
Ensuring Integrity Through Analytical Excellence.

## Certificate of Analysis: Final

Cawthron Contract Number: 10579

**Project Number:** V37515

**Hill Laboratories**  
**Private Bag 3205**  
**HAMILTON 3240**

**Attention:** Environmental Reports Officer

**Customer Order No:** 151461

**Customer Ref:** fbSubCawthron 1799: 2135103

**Email Recipients:** Environmental Reports Officer, Malar Sritharan, Subcontracting Hill Laboratories

### Sample Details

**Laboratory ID:** V37515-1      **Sample Type:** Product

**Description:** Noni (juice)

**Date Received:** 06/03/2019 08:50

**Customer ID:** 2135103.1

Analysis	Result	Units	Method
Total Fat	<0.1	g/100g	AOAC 948.15 OMA online (mod)
Saturated Fat	<0.1	g/100g	AOAC 948.15 OMA online (mod)

Results apply to samples as received unless otherwise specified.

Our routine detection limits for chemical testing relate to samples with a clean matrix.

Reported detection limits may be higher for individual samples if there is insufficient sample or the matrix is complex.

< means less than, > means greater than

**Date Generated:** 12/3/19

**Authorised by:** Navneet Kaur

**Position:** Senior Technician, Food Chemistry Laboratory

**Signature:**



This document may only be reproduced with permission from Cawthron. Part reproduction or alteration of the document is prohibited.

**Report Number:** 762411

**Project Number:** V37515  
V18.33

SL:F

Unless otherwise specified, all tests reported herein have been performed in accordance with the laboratory's scope of registration.



AsureQuality Limited | 1C Quadrant Drive | Waiwhetu | Lower Hutt 5010 | Wellington | New Zealand  
 PO Box 31242 | Lower Hutt 5040 | Wellington | New Zealand  
 t. +64 4 570 8800 | e. cswellington@asurequality.com | w. www.asurequality.com  
*Global Experts in Food Assurance*

## Certificate of Analysis

**Submission Reference: fbSubAQ\_LH 20**

**Final Report**

**Environment Client Service Managers**  
**Hill Laboratories - Hamilton**  
**Private Bag 3205**  
**Hamilton 3240**  
**New Zealand**

PO Number: 151462

Report Issued: 13-Mar-2019

AsureQuality Reference: **19-53122**

Sample(s) Received: 06-Mar-2019 09:00

### Results

The tests were performed on the samples as received.

**Customer Sample Name:** 2135103.1 **AsureQuality ID:** 19-53122-1

**Sample Condition:** Acceptable

Test	Result	Unit	Method Reference
<b>Patulin in Fruit Juice and Fruit Pulp</b>			
Patulin	<0.010	mg/kg	AsureQuality Method (LC-MS/MS)

### Analysis Summary

#### Wellington Laboratory

Analysis	Method	Authorised by
<b>Patulin in Fruit Juice and Fruit Pulp</b> PS-PATU01, 01-DEFAULT	AsureQuality Method (LC-MS/MS)	Lisa Graham

Results that are prefixed with '<' indicate the lowest level at which the analyte can be reported, and that in this case the analyte was not observed above this limit.

**Lisa Graham**

**Scientist / Team Leader**

AsureQuality has used reasonable skill, care, and effort to provide an accurate analysis of the sample(s) which form(s) the subject of this report. However, the accuracy of this analysis is reliant on, and subject to, the sample(s) provided by you and your responsibility as to transportation of the sample(s). AsureQuality's standard terms of business apply to the analysis set out in this report.

**Report Number: 1431703** This report must not be reproduced except in full, without the prior written approval of the laboratory.

**Page 1 of 2**

---

## Appendix

---

### Analyte LOR Summary

---

#### Patulin in Fruit Juice and Fruit Pulp - AsureQuality Method (LC-MS/MS)

Analyte	LOR (mg/kg)
Patulin	0.010

---

LOR = Limit of Reporting

LOD = Limit of Detection

NR = Not Reportable