



Certificate of Analysis

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Client: EcoCast Limited	Lab No: 2390244	CPV1
Contact: EcoCast Limited 73 Goulstone Road Whakatane 3120	Date Received: 24-Jun-2020	
	Date Reported: 01-Jul-2020	
	Quote No:	
	Order No: jf	
	Client Reference: Vermicast	
	Submitted By: John Fell	

Sample Type: COMPOST, Vermicast (Solid)

Sample Name:	Vermicast July 2020		Guideline NZS 4454:2005*	BioGro Std 2009 Appendix A**
Lab Number:	2390244.1			
Total Analysis Results - Dry Weight Basis				
Organic Matter	%	36.3	Greater than 25	-
Total Carbon	%	21.0	-	-
Total Nitrogen	%	1.56	Greater than 0.6 (if a contribution to plant nutrition is claimed)	-
C/N Ratio		13.5	-	-
Dry Matter	%	47.4	-	-
'Total' Phosphorus	mg/kg	10,440	-	-
'Total' Phosphorus	%	1.04	Greater than 0.1 (if a contribution to plant nutrition is claimed)	-
'Total' Sulphur	mg/kg	3,820	-	-
'Total' Sulphur	%	0.38	-	-
'Total' Potassium	mg/kg	2,680	-	-
'Total' Potassium	%	0.27	-	-
'Total' Calcium	mg/kg	115,000	-	-
'Total' Calcium	%	11.50	-	-
'Total' Magnesium	mg/kg	3,840	-	-
'Total' Magnesium	%	0.38	-	-
'Total' Sodium	mg/kg	1,775	-	-
'Total' Sodium	%	0.18	-	-
'Total' Iron	mg/kg	6,700	-	-
'Total' Manganese	mg/kg	240	-	-
'Total' Zinc	mg/kg	240	Less than 600	Less than 300
'Total' Copper	mg/kg	139	Less than 300	Less than 60
'Total' Boron	mg/kg	35	Less than 200	-

* New Zealand Standard Composts, Soil Conditioners and Mulches: NZS 4454:2005, Table 3.1. Test results apply to the sample(s) submitted for analysis and do not necessarily imply that the product meets all the requirements of the standard. Note that the laboratory methods used for these test results may differ slightly to those referred to in the standard.

** Bio-Gro NZ Organic Standards 2009, Appendix A, Table A3: Limits for Heavy Metals in Soils and Composts: BioGro Standard for compost - ingredients other than household waste. Other limits apply for compost with ingredients including household waste.

Analyst's Comments

Sample 1 Comment:

Note 1: Reporting Units.

% = g/100g = g analyte/100g compost (dry weight basis)

mg/kg = ppm = mg analyte/kg compost (dry weight basis)

Electrical Conductivity units mS/cm = dS/m

Note 2: % x 10 = kg/T

Note 3: To calculate results to a fresh weight basis:

Result (dry matter basis) x (Dry Matter % / 100) = Result (fresh weight basis)

Sample 1 Comment:

Organic Matter Note: The relationship between carbon and organic matter varies according to organic matter type and soil type if soil is present in the product. Commonly used conversion factors range from 1.65 to 2.2 (Ref: NZS 445:2005). A Loss on Ignition (LOI) test may be requested if a more accurate organic matter value is required.

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 Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: COMPOST, Vermicast (Solid)

Test	Method Description	Default Detection Limit	Sample No
'Total' Sulphur	Nitric/hydrochloric digestion (based on US EPA 200.2) followed by ICP-OES. (Total recoverable nutrients reported on a dry weight basis) The levels from this method are referred to as 'Totals' in quotation marks, as they will be a slight under-estimation of the true Totals for some elements.	45 mg/kg	1
'Total' Sulphur	Calculated from 'Total' Sulphur result for mg/kg (reported on a dry weight basis).	0.01 %	1
Total Carbon	Sample dried and ground and analysed by Dumas combustion. Results expressed on a dry weight basis.	0.2 %	1
Total Nitrogen	Sample dried and ground and analysed by Dumas combustion. Results expressed on a dry weight basis.	0.04 %	1
Organic Matter	Dumas combustion. Organic Matter is 1.72 x Total Carbon.	0.2 %	1
Dry Matter	Weight loss on drying at 105°C for 24 hours.	0.5 %	1
'Total' Phosphorus	Calculated from 'Total' Phosphorus result for mg/kg (reported on a dry weight basis).	0.01 %	1
'Total' Phosphorus	Nitric/hydrochloric digestion (based on US EPA 200.2) followed by ICP-OES. (Total recoverable nutrients reported on a dry weight basis) The levels from this method are referred to as 'Totals' in quotation marks, as they will be a slight under-estimation of the true Totals for some elements. In-house.	65 mg/kg	1
'Total' Potassium	Calculated from 'Total' Potassium result for mg/kg (reported on a dry weight basis).	0.01 %	1
'Total' Potassium	Nitric/hydrochloric digestion (based on US EPA 200.2) followed by ICP-OES. (Total recoverable nutrients reported on a dry weight basis) The levels from this method are referred to as 'Totals' in quotation marks, as they will be a slight under-estimation of the true Totals for some elements.	70 mg/kg	1
'Total' Calcium	Calculated from 'Total' Calcium result for mg/kg (reported on a dry weight basis).	0.01 %	1
'Total' Calcium	Nitric/hydrochloric digestion (based on US EPA 200.2) followed by ICP-OES. (Total recoverable nutrients reported on a dry weight basis) The levels from this method are referred to as 'Totals' in quotation marks, as they will be a slight under-estimation of the true Totals for some elements.	100 mg/kg	1
'Total' Magnesium	Calculated from 'Total' Magnesium result for mg/kg (reported on a dry weight basis).	0.01 %	1
'Total' Magnesium	Nitric/hydrochloric digestion (based on US EPA 200.2) followed by ICP-OES. (Total recoverable nutrients reported on a dry weight basis) The levels from this method are referred to as 'Totals' in quotation marks, as they will be a slight under-estimation of the true Totals for some elements.	40 mg/kg	1
'Total' Sodium	Calculated from 'Total' Sodium result for mg/kg (reported on a dry weight basis).	0.01 %	1

Sample Type: COMPOST, Vermicast (Solid)			
Test	Method Description	Default Detection Limit	Sample No
'Total' Sodium	Nitric/hydrochloric digestion (based on US EPA 200.2) followed by ICP-OES. (Total recoverable nutrients reported on a dry weight basis) The levels from this method are referred to as 'Totals' in quotation marks, as they will be a slight under-estimation of the true Totals for some elements.	20 mg/kg	1
'Total' Iron	Nitric/hydrochloric digestion (based on US EPA 200.2) followed by ICP-OES. (Total recoverable nutrients reported on a dry weight basis) The levels from this method are referred to as 'Totals' in quotation marks, as they will be a slight under-estimation of the true Totals for some elements.	40 mg/kg	1
'Total' Manganese	Nitric/hydrochloric digestion (based on US EPA 200.2) followed by ICP-OES. (Total recoverable nutrients reported on a dry weight basis) The levels from this method are referred to as 'Totals' in quotation marks, as they will be a slight under-estimation of the true Totals for some elements.	4 mg/kg	1
'Total' Zinc	Nitric/hydrochloric digestion (based on US EPA 200.2) followed by ICP-OES. (Total recoverable nutrients reported on a dry weight basis) The levels from this method are referred to as 'Totals' in quotation marks, as they will be a slight under-estimation of the true Totals for some elements.	4 mg/kg	1
'Total' Copper	Nitric/hydrochloric digestion (based on US EPA 200.2) followed by ICP-OES. (Total recoverable nutrients reported on a dry weight basis) The levels from this method are referred to as 'Totals' in quotation marks, as they will be a slight under-estimation of the true Totals for some elements.	4 mg/kg	1
'Total' Boron	Nitric/hydrochloric digestion (based on US EPA 200.2) followed by ICP-OES. (Total recoverable nutrients reported on a dry weight basis) The levels from this method are referred to as 'Totals' in quotation marks, as they will be a slight under-estimation of the true Totals for some elements.	6 mg/kg	1

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

Dates of testing are available on request. Please contact the laboratory for more information.

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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