

## Compost or Manure Analysis

### Sustainable Soil Management with the Mikhail Balance System

FILE NO : 2408186623

LANDTASIA ORGANIC FARMS P/L  
PO BOX 116

BUNGENDORE, NSW 2621

SAMPLE ID : 50036

DATE ISSUED : 23/08/2024  
DATE RECEIVED : 6/08/2024

CLIENT ID : LAN055  
PHONE : 02 6238 0565  
REFERENCE :  
REFERENCE PHONE :

ANALYSIS REQUIRED : Total, Available  
& CEC

### CONTENTS:

	<i>page</i>
1. Analysis and NPK	2
2. Plant Available Nutrients	3
3. Exchangeable Cations & suggested amendments	4

## Analysis

ITEM	unit	RESULT
------	------	--------

### Basic Measures:

pH (1:5 Water)			8.04
pH (1:5 0.01M CaCl <sub>2</sub> )			7.64
Electrical Conductivity	EC	μS/cm	1050
TOTAL SOLUBLE SALT	TSS	ppm	3465

### Major Nutrients:

TOTAL NITROGEN	N	kg/t	13.6	1.364 %
TOTAL PHOSPHORUS	P	kg/t	2.6	0.256 %
TOTAL POTASSIUM	K	kg/t	9	0.896 %
TOTAL SULPHUR	S	kg/t	1.6	0.158 %

(Major Nutrients in percentages)

### Total Cations:

TOTAL CALCIUM	Ca	%	1.56
TOTAL MAGNESIUM	Mg	%	0.316
TOTAL SODIUM	Na	%	0.0533

### Trace Minerals:

TOTAL COPPER	Cu	ppm	25.4
TOTAL ZINC	Zn	ppm	120
TOTAL IRON	Fe	ppm	8320
TOTAL MANGANESE	Mn	ppm	392
TOTAL COBALT	Co	ppm	5.01
TOTAL MOLYBDENUM	Mo	ppm	1.28
TOTAL BORON	B	ppm	23.7

### Carbon Content:

TOTAL ORGANIC MATTER		%	46.4
TOTAL ORGANIC CARBON		%	23.192
CARBON NITROGEN RATIO	C:N		17
MOISTURE CONTENT	MC	%	44.9

### Plant Available Nutrients

ITEM		unit	RESULT
AVAILABLE CALCIUM	Ca	ppm	8080
AVAILABLE MAGNESIUM	Mg	ppm	1908
AVAILABLE SODIUM	Na	ppm	591.1
AVAILABLE NITROGEN	N	ppm	28.7
AVAILABLE PHOSPHORUS	P	ppm	359
AVAILABLE POTASSIUM	K	ppm	6747
AVAILABLE SULPHUR	S	ppm	31.1
AVAILABLE COPPER	Cu	ppm	9.02
AVAILABLE ZINC	Zn	ppm	97.1
AVAILABLE IRON	Fe	ppm	36
AVAILABLE MANGANESE	Mn	ppm	151
AVAILABLE COBALT	Co	ppm	2.03
AVAILABLE MOLYBDENUM	Mo	ppm	1.21
AVAILABLE BORON	B	ppm	4.29

Notes: These results represent the proportion of the Total nutrients (page 2) that will be immediately available for plant uptake.

ppm (parts per million) = mg/L (milligram per litre) = mg/kg (milligram per kilogram)

1 % = 10,000 ppm

### Microbial Analysis

ITEM	UNIT	RESULT	% of Total Active Bacteria
ACTIVE LACTIC ACID BACTERIA		1,000	13.89 %
Active Fungi	cfu/g	3,000	
Cellulose Utilisers	cfu/g	2,000	
TOTAL ACTIVE FUNGI	cfu/g	<u>5,000</u>	69.44 %
ACTIVE YEASTS	cfu/g	100	1.39 %
ACTIVE ACTINOMYCETES	cfu/g	1,000	13.89 %
ACTIVE PHOTOSYNTHETIC BACTERIA	cfu/g	100	1.39 %
Total Active Population:	cfu/g	7,200	

See notes on Biology Management (page 3).

*No bacterial colonies were detected on the culture media, if the result is 1000 cfu/g for Lactic Acid Bacteria and Actinomycetes or 100 cfu/g for Yeast, Fungi, Cellulose and Photosynthetic Bacteria.*

ppm = parts per million = milligrams per kilogram  
1 % = 10,000 ppm

cfu/g = colony forming unit per gram of material

### Exchangeable Cations

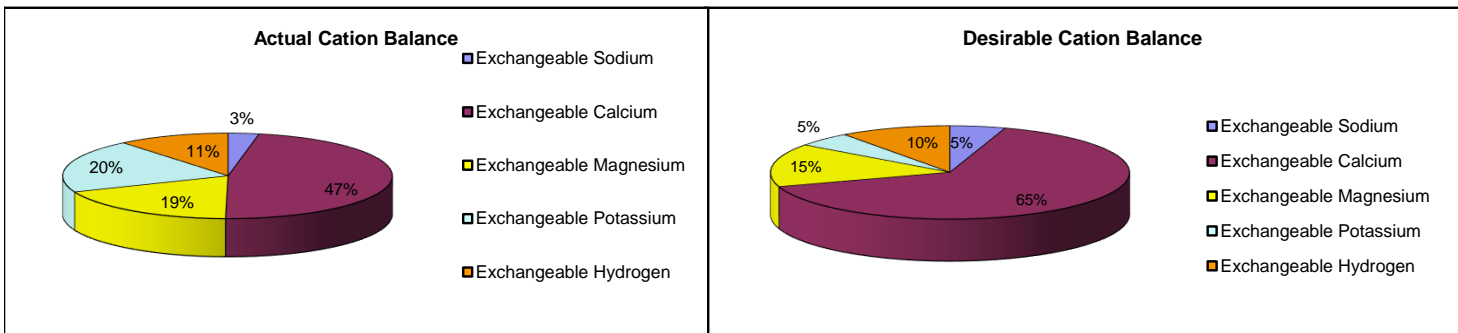
**EXCHANGEABLE CATIONS RESULTS**

CALCIUM	Ca	meq/100g of sample	<b>34.86</b>
MAGNESIUM	Mg	meq/100g of sample	<b>13.72</b>
SODIUM	Na	meq/100g of sample	<b>2.22</b>
POTASSIUM	K	meq/100g of sample	<b>14.93</b>
HYDROGEN	H	meq/100g of sample	<b>8.07</b>
ADJ. EXCH. HYDROGEN	H	meq/100g of sample	<b>0</b>
CATION EXCHANGE CAPACITY			<b>73.8</b>
ADJUSTED CEC			<b>65.73</b>
SATURATION BASE PERCENTAGE			<b>90</b>

meq = milliequivalent

**EXCHANGEABLE CATION BALANCE % OF ADJUSTED CEC DESIRABLE**

CALCIUM PERCENTAGE		<b>53.04</b>	<b>65-70%</b>
MAGNESIUM PERCENTAGE		<b>20.87</b>	<b>12-15%</b>
SODIUM PERCENTAGE	ESP	<b>3.38</b>	<b>0.5-5%</b>
POTASSIUM PERCENTAGE		<b>22.71</b>	<b>3-5%</b>
ADJ. HYDROGEN PERCENTAGE		<b>0</b>	<b>&lt;20%</b>
CALCIUM / MAGNESIUM RATIO	Ca/Mg	<b>2.54</b>	<b>2 - 4</b>



**CATION BALANCE AMENDMENTS (For optimum effectiveness on application)**

GYPSUM REQUIREMENT	<b>6.2 kg/m<sup>3</sup></b>			
LIME REQUIREMENT	<b>0.0 kg/m<sup>3</sup></b>			
DOLOMITE REQUIREMENT	<b>0.0 kg/m<sup>3</sup></b>			
MAGNESIUM SULPHATE	<b>0.0 kg/m<sup>3</sup></b>	<b>OR</b>	MAGNESIUM OXIDE	<b>0.0 kg/m<sup>3</sup></b>

**NB. The effectiveness of the compost may be improved by mixing in the suggested materials (above) prior to application.**

## ANALYTICAL METHODS

Items	Methods
pH (1:5 Water)	4A1
pH (1:5 CaCl <sub>2</sub> )	4B1
Electrical conductivity (1:5 Water)	3A1
Total Soluble Salts	Calculation from Electrical conductivity
Total Nitrogen	Dumas method, 7A5
Total Calcium, Magnesium, Sodium, Potassium	Acid digestion, ICPAES
Total Phosphorus, Sulphur, Copper, Zinc, Boron	Acid digestion, ICPAES
Total Iron, Manganese, Cobalt, Molybdenum	Acid digestion, ICPAES
Exchangeable Calcium, Magnesium, Sodium, Potassium	15D3 or 15A1
Exchangeable Hydrogen	Barium Chloride-Triethanolamine method*
Available Nitrogen	Copper-cadmium reductor column at a pH of 8.0
Available Phosphorus	Olsen extractable, 9C2a
Available Sulphur	KCl 40, 10D1
Available Copper, Zinc, & Cobalt	EDTA, 12B1
Available Molybdenum	Ammonium Oxalate-Oxalic acid-di-iso propyl ether method of E.H. Mikhail (1981)
Available Iron & Manganese	12C2
Available Boron	Method 6B3
Total Organic Carbon	Acid digestion

NB. For available Iron and Manganese, SWEP uses the method developed by E.H. Mikhail (1980) due to the tendency for the standard EDTA method to produce erroneously high results.

For numbered test methods:

Rayment, G.E. & Lyons, D.J. (2011). Soil Chemical Methods - Australasia. CSIRO Publishing, 150 Oxford Street, Collingwood Vic 3066, Australia.

\*Peech, M., Cowan, R.L. & Baker, J.H. (1962). Soil Science Society American Procedures, A critical study of the Barium chloride-

AQIS Approved Quarantine Site.

Victorian DPI accreditation to receive samples from PIZ and PCN infested zones.

**Disclaimer:** All results and/or recommendations in this report are made in good faith and are based on past and ongoing research by SWEP Pty Ltd. However, limitations such as the vagaries of climatic conditions mean that we cannot guarantee production of any crop by the use of this test and associated recommendations, and cannot be held responsible for any results obtained.