

### AGRICULTURAL SOIL ANALYSIS REPORT

1 sample supplied by Organic and Regenerative Investment Co-operative on 4/06/2020 . Lab Job No.J4486  
 Analysis requested by Carolyn Suggate. Your Job: Red Plateau Organic  
 547 Dry Creek Road BONNIE DOON VIC 3720

		Sample 1	Heavy Soil	Medium Soil	Light Soil	Sandy Soil
Sample ID:	Top Paddock					
Crop:	Avocado					
Client:	Red Plateau organic	Clay	Clay Loam	Loam	Loamy Sand	
Parameter	Method reference	J4486/1	Indicative guidelines - refer to Notes 6 and 8			
Soluble Calcium (mg/kg)		1,196	1150	750	375	175
Soluble Magnesium (mg/kg)	**Inhouse S10 - Morgan 1	166	160	105	60	25
Soluble Potassium (mg/kg)		134	113	75	60	50
Soluble Phosphorus (mg/kg)		1.2	15	12	10	5.0
Phosphorus (mg/kg P)	**Rayment & Lyons 2011 - 9E2 (Bray 1)	12	45 <sup>note 8</sup>	30 <sup>note 8</sup>	24 <sup>note 8</sup>	20 <sup>note 8</sup>
	**Rayment & Lyons 2011 - 9B2 (Colwell)	49	80	50	45	35
	**Inhouse S3A (Bray 2)	37	90 <sup>note 8</sup>	60 <sup>note 8</sup>	48 <sup>note 8</sup>	40 <sup>note 8</sup>
Nitrate Nitrogen (mg/kg N)		8.3	15	13	10	10
Ammonium Nitrogen (mg/kg N)	**Inhouse S37 (KCl)	11	20	18	15	12
Sulfur (mg/kg S)		12	10.0	8.0	8.0	7.0
pH	Rayment & Lyons 2011 - 4A1 (1:5 Water)	6.77	6.5	6.5	6.3	6.3
Electrical Conductivity (dS/m)	Rayment & Lyons 2011 - 3A1 (1:5 Water)	0.055	0.200	0.150	0.120	0.100
Estimated Organic Matter (% OM)	**Calculation: Total Carbon x 1.75	8.3	> 5.5	>4.5	> 3.5	> 2.5
Exchangeable Calcium	(cmol./kg)	10	15.6	10.8	5.0	1.9
	(kg/ha)	4,683	7000	4816	2240	840
Exchangeable Magnesium	(mg/kg)	2,091	3125	2150	1000	375
	(cmol./kg)	1.7	2.4	1.7	1.2	0.60
Exchangeable Potassium	(kg/ha)	475	650	448	325	168
	(mg/kg)	212	290	200	145	75
Exchangeable Sodium	(cmol./kg)	0.61	0.60	0.50	0.40	0.30
	(kg/ha)	537	526	426	336	224
Exchangeable Aluminium	(mg/kg)	240	235	190	150	100
	(cmol./kg)	<0.065	0.3	0.26	0.22	0.11
Exchangeable Hydrogen	(kg/ha)	<33	155	134	113	57
	(mg/kg)	<15	69	60	51	25
Exchangeable Hydrogen	(cmol./kg)	0.03	0.6	0.5	0.4	0.2
	(kg/ha)	5.1	121	101	73	30
Exchangeable Hydrogen	(mg/kg)	2.3	54	45	32	14
	(cmol./kg)	<0.01	0.6	0.5	0.4	0.2
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	(kg/ha)	<1	13	11	8	3
	(mg/kg)	<1	6	5	4	2
Effective Cation Exchange Capacity (ECEC) (cmol./kg)	**Calculation: Sum of Ca,Mg,K,Na,Al,H (cmol./kg)	13	20.1	14.3	7.8	3.3
Calcium (%)		81	77.6	75.7	65.6	57.4
Magnesium (%)		14	11.9	11.9	15.7	18.1
Potassium (%)		4.8	3.0	3.5	5.2	9.1
Sodium - ESP (%)	**Base Saturation Calculations - Cation cmol./kg / ECEC x 100	0.35	1.5	1.8	2.9	3.3
Aluminium (%)		0.20	6.0	7.1	10.5	12.1
Hydrogen (%)		0.00				
Calcium/Magnesium Ratio	**Calculation: Calcium / Magnesium (cmol./kg)	6.0	6.5	6.4	4.2	3.2

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Crop:	Avocado					
Client:	Red Plateau organic	Clay	Clay Loam	Loam	Loamy Sand	
Parameter	Method reference	J4486/1	Indicative guidelines - refer to Notes 6 and 8			
Zinc (mg/kg)		5.4	6.0	5.0	4.0	3.0
Manganese (mg/kg)	Rayment & Lyons 2011 - 12A1 (DTPA)	12	25	22	18	15
Iron (mg/kg)		41	25	22	18	15
Copper (mg/kg)		1.4	2.4	2.0	1.6	1.2
Boron (mg/kg)	**Rayment & Lyons 2011 - 12C2 (Hot CaCl <sub>2</sub> )	0.46	2.0	1.7	1.4	1.0
Silicon (mg/kg Si)	**Inhouse S11 (Hot CaCl <sub>2</sub> )	9.0	50	45	40	35
Total Carbon (%)	Inhouse S4a (LECO Trumac Analyser)	4.8	> 3.1	> 2.6	> 2.0	> 1.4
Total Nitrogen (%)		0.36	> 0.30	> 0.25	> 0.20	> 0.15
Carbon/Nitrogen Ratio	**Calculation: Total Carbon/Total Nitrogen	13	10-12	10-12	10-12	10-12
Basic Texture	**Inhouse S65	Clay Loam	..	..	..	..
Basic Colour		Red	..	..	..	..
Chloride Estimate (equiv. mg/kg)	**Calculation: Electrical Conductivity x 640	35	..	..	..	..
Total Calcium (mg/kg)		3,282	1000-10 000 Ca			
Total Magnesium (mg/kg)		651	500-5000 Mg			
Total Potassium (mg/kg)		448	200-2000 K			
Total Sodium (mg/kg)		<50	100-500 Na			
Total Sulfur (mg/kg)		499	100-1000 S			
Total Phosphorus (mg/kg)		1,097	400-1500 P			
Total Zinc (mg/kg)		158	20-50 Zn			
Total Manganese (mg/kg)		1,730	200-2000 Mn			
Total Iron (mg/kg)		117,186	1000-50 000 Fe			
Total Copper (mg/kg)		17	20-50 Cu			
Total Boron (mg/kg)		8.2	2-50 B			
Total Silicon (mg/kg)	Rayment & Lyons 2011 - 17C1 Aqua Regia	671	1000-3000 Si			
Total Aluminium (mg/kg)		110,523	2000-50 000 Al			
Total Molybdenum (mg/kg)		8.6	0.5-3.0 Mo			
Total Cobalt (mg/kg)		3.9	5-50 Co			
Total Selenium (mg/kg)		1.1	0.1-2.0 Se			
Total Cadmium (mg/kg)		<0.5	<1 Cd			
Total Lead (mg/kg)		25	2-200 Pb			
Total Arsenic (mg/kg)		5.1	1-50 As			
Total Chromium (mg/kg)		38	5-1000 Cr			
Total Nickel (mg/kg)		12	5-500 Ni			
Total Mercury (mg/kg)		0.21	< 0.2 Hg			
Total Silver (mg/kg)		<1	.. Ag			

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<b>Parameter</b>	<b>Method reference</b>	J4486/1	Indicative guidelines - refer to Notes 6 and 8			

**Notes:**

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. *Soil Chemical Methods - Australasia*. CSIRO Publishing: Collingwood.
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and LaMotte Soil Handbook.
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- National Environmental Protection (Assessment of Site Contamination) Measure 2013, Schedule B(1) - Guideline on Investigation Levels for Soil and Groundwater. Table 5-A Background Ranges.
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your agricultural soil results'.
- Conversions for 1 cmol<sub>e</sub>/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over-estimate
- \*\* NATA accreditation does not cover the performance of this service.
- Analysis conducted between sample arrival date and reporting date.
- This report is not to be reproduced except in full. Results only relate to the item tested.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal).
- This report was issued on 12/06/2020.



Quality Checked: Kris Saville  
 Agricultural Co-Ordinator

