

AGRICULTURAL SOIL ANALYSIS REPORT - SOLUBLE, EXCHANGEABLE AND TOTAL NUTRIENTS

2 soil samples supplied by Ausmin Australia on 19th November, 2009 - Lab Job No. A6285
 Analysis requested by Mike Smith

		Block ID:	Sample 2	Desirable Level	
		Sigatoka Farm	n/g	Heavy Soil	
		Client:	Joseph Turaga	guidelines	
		Nutrient	Units	A6285/2	
Soluble Tests & Morgan 1 Extract	Calcium	Ca	ppm	1729	1150
	Magnesium	Mg	ppm	368	160
	Potassium	K	ppm	128	113
Soluble Tests & Colwell + Morgan 2 Phosphorus Extract	Phosphorus (Morgan)	P	ppm	1.0	15
	Phosphorus (Bray 1)	P	ppm	7.7	45 ^{note 8}
	Phosphorus (Colwell)	P	ppm	78	80
	Phosphorus (Bray 2)	P	ppm	54	90 ^{note 8}
Soluble Tests & Bray 2 Phosphorus Extract	Nitrate	N	ppm	13.1	15
	Ammonium	N	ppm	6.0	20
	Sulphate Sulphur	S	ppm	18	40
	pH (1:5 water)		units	5.61	6.5
	Conductivity (1:5 water)		µS/cm	124	200
		Organic Matter	%	3.34	>5.5
Ammonium Acetate Equiv. Extract	Calcium	Ca	cmol/Kq	22.03	16
		Ca	kg/ha	9868	7000
		Ca	ppm	4405	3125
	Magnesium	Mg	cmol/Kq	5.70	2.4
		Mg	kg/ha	1532	650
		Mg	ppm	684	290
	Potassium	K	cmol/Kq	0.71	0.6
		K	kg/ha	621	526
		K	ppm	277	235
	Sodium	Na	cmol/Kq	0.20	0.3
		Na	kg/ha	103	155
		Na	ppm	46	69
Acidly Titration	Aluminium	Al	cmol/Kq	0.20	0.6
		Al	kg/ha	40	108
		Al	ppm	18	54
Acidly Titration	Hydrogen	H ⁺	cmol/Kq	0.20	0.6
		H ⁺	ka/ha	4	12
		H ⁺	ppm	2	6
		Cation Exchange Capacity	cmol/Kq	29.0	20
Percent Base Saturation	Calcium	Ca	%	75.9	77
	Magnesium	Mg	%	19.6	12
	Potassium	K	%	2.4	3
	Sodium	Na	%	0.7	2
	Aluminium	Al	%	0.7	7
	Hydrogen	H ⁺	%	0.7	7
		Calcium/ Magnesium Ratio	ratio	3.9	6.4
Micronutrients- CaCl ₂ Extracts	Zinc	Zn	ppm	1.9	6
	Manganese	Mn	ppm	178	25
	Iron	Fe	ppm	141	25
	Copper	Cu	ppm	8.8	2.4
	Boron	B	ppm	0.19	2.0
Acid Extract	Molybdenum	Mo	ppm	0.44	2.0
	Cobalt	Co	ppm	25.05	40
	Selenium	Se	ppm	1.33	2.0
CaCl ₂ Extract	Silicon	Si	ppm	78.7	50
Total Nutrients	Total Carbon	C	%	2.00	>3.1
	Total Nitrogen	N	%	0.14	>0.3
	Carbon/ Nitrogen Ratio	ratio		14.5	10 to 12
		Basic Texture	t	Loam	..
		Basic Colour	c	Brownish	..
		Chloride Estimate	equiv. ppm	79	..
TOTAL STORED NUTRIENTS AND METALS <i>Total/Acid Extractable</i>	Calcium	Ca	ppm	5,739	1,000 - 10,000
	Magnesium	Mg	ppm	9,010	500 - 5,000
	Potassium	K	ppm	2,790	200 - 2,000
	Sodium	Na	ppm	132	100 - 500
	Sulfur	S	ppm	266	100 - 1,000
	Phosphorus (Total)	as P	ppm	1,301	400 - 1,500
	Zinc	Zn	ppm	122.4	20 - 50
	Manganese	Mn	ppm	1,387	200 - 2,000
	Iron	Fe	ppm	54,148	1,000 - 50,000
	Copper	Cu	ppm	122.4	20 - 50
	Boron	B	ppm	1.7	2 - 50
	Silicon	Si	ppm	1,143	1,000 - 3,000
	Aluminium	Al	ppm	32,626	2,000 - 50,000
	Molybdenum	Mo	ppm	0.44	0.5 - 3
	Cobalt	Co	ppm	25.05	5 - 50
	Selenium	Se	ppm	1.33	0.1 - 2.0
	Cadmium	Cd	ppm	..	< 1 Cd
	Lead	Pb	ppm	..	< 10 Pb
	Arsenic	As	ppm	..	< 5 As
	Chromium	Cr	ppm	..	10 - 100 Cr
Nickel	Ni	ppm	..	1 - 50 Ni	
Mercury	Hg	ppm	..	< 1 Hg	
Silver	Ag	ppm	..	< 1 Ag	

In conclusion.
 I would suggest the following program.
 PowerPhos @ 120kg per Ha in the row twice per year
 Bio Brew Soil @ 8 litres per Ha in the row at planting
 Bio Brew Growth @ 8 litres per Ha mixed with 2 litres of C-Kelp Super per Ha, used as a foliar.
 continue using this foliar application monthly until desired fruiting height has been reached and then begin to combine Bio Brew Growth and Bio Brew Harvest @ 4 litres + 4 litres respectively with the C-Kelp also included @ 2 litres. continue with this application for the life of the crop.
 we may look at an application of Vital Fish at intervals to be determined @ 3 litres per Ha on the ground in the row.

Notes:
 1. Cation Exchange Capacity = sum of the exchangeable Mg, Ca, Na, K, H and Al
 2. Methods from Rayment and Higgins, 1992. Australian Laboratory Handbook of Soil and Water Chemical Methods.
 3. Reams' Morgan Extract' available nutrient testing adapted from 'Science in Agriculture' and 'Non-Toxic Farming' and Lamorte Soil Handbook.
 4. All results as dry weight; ppm = mg/Kg air dried soil sieved at 2mm (ie. not crushed)
 5. For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm
 6. 1 cmol⁺/Kg = 1 meq/100g; 1 Lb/Acre = 2 ppm (parts per million); **kg/ha = 2.24 x ppm**
 7. Conversions for 1 cmol⁺/Kg = 230 Kg/Hectare Sodium ; 780 Kg/ha Potassium ; 240 Kg/ha Magnesium ; 400 Kg/ha Calcium.
 8. Guideline values for phosphorus have reduced in accordance with Australian soils
 9. .. Denotes not requested
 10. Organic Matter = (%C Total Carbon) x 1.75
 11. Sample digested with Aqua Regia acid for total nutrients/ salts and metals. 'Totals' guidelines are only included to provide typical nutrient storage.
 12. Guidelines provided are suggestions only and based on 'Albrecht' and 'Reams' concepts