Project Name: RR
Project Code: RR **Site ID:** B564 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: G.D. Hubble
Date Desc.: 21/10/66
Map Ref.: Sheet No. : 9348 1:100000
Northing/Long.: 152.4
Easting/Lat.: -24.85
Locality:
Elevation: 27 metres
Rainfall: 1105
Runoff: Rapid
Drainage: Well drained

Geology

ExposureType: Soil pit
Geol. Ref.: Czub
Conf. Sub. is Parent. Mat.: No Data
Substrate Material: Undisturbed soil core, 2.1 m deep,Basalt

Land Form

Rel/Slope Class: Gently undulating plains <9m 1-3%
Morph. Type: No Data
Elem. Type: Plain
Slope: 0 %
Pattern Type: Rises
Relief: 15 metres
Slope Category: Gently inclined
Aspect: No Data

Surface Soil Condition (dry):

Erosion:

Soil Classification

Australian Soil Classification:
Haplic Mesotrophic Red Ferrosol
ASC Confidence:
Analytical data are incomplete but reasonable confidence.
Mapping Unit: N/A
Principal Profile Form: Uf5.21
Great Soil Group: Krasnozem

Site Disturbance: Complete clearing. Pasture, native or improved, cultivated at some stage

Vegetation:

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

A1	0 - 0.1 m	Dark reddish brown (5YR3/3-Moist); ; Light clay; Moderate grade of structure, 5-10 mm, Polyhedral; <2 mm, Angular blocky; Many (>5 per 0.01m2) Coarse (>5mm) macropores, Dry; Firm consistence; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 6.8 (pH meter);
A1	0.1 - 0.2 m	Dark reddish brown (5YR3/3-Moist); ; Light clay; Moderate grade of structure, 5-10 mm, Polyhedral; <2 mm, Angular blocky; Many (>5 per 0.01m2) Coarse (>5mm) macropores, Dry; Firm consistence; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 6.8 (pH meter); Diffuse change to -
B21	0.2 - 0.3 m	Dark reddish brown (2.5YR3/4-Moist); ; Light clay; Strong grade of structure, 5-10 mm, Polyhedral; <2 mm, Angular blocky; Many (>5 per 0.01m2) Coarse (>5mm) macropores, Moderately moist; Weak consistence; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 6.8 (pH meter);
B21	0.3 - 0.6 m	Dark reddish brown (2.5YR3/4-Moist); ; Light clay; Strong grade of structure, 10-20 mm, Polyhedral; <2 mm, Angular blocky; Many (>5 per 0.01m2) Coarse (>5mm) macropores, Moderately moist; Weak consistence; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 6.8 (pH meter);
B21	0.6 - 0.9 m	Dark reddish brown (2.5YR3/4-Moist); ; Light clay; Strong grade of structure, 10-20 mm, Polyhedral; <2 mm, Angular blocky; Many (>5 per 0.01m2) Coarse (>5mm) macropores, Moderately moist; Weak consistence; Few (2 - 10 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 7 (pH meter); Diffuse change to -
B22	0.9 - 1.2 m	Reddish brown (2.5YR4/4-Moist); ; Light clay; Moderate grade of structure, 10-20 mm, Angular blocky; 5-10 mm, Angular blocky; Moist; Very weak consistence; 0-2%, Basalt, coarse fragments; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 7 (pH meter);
B22	1.2 - 1.5 m	Reddish brown (2.5YR4/4-Moist); ; Light clay; Moderate grade of structure, 10-20 mm, Angular blocky; 5-10 mm, Angular blocky; Moist; Very weak consistence; 0-2%, Basalt, coarse fragments; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 7 (pH meter);

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B22	1.5 - 1.8 m	Reddish brown (2.5YR4/4-Moist); ; Light clay; Moderate grade of structure, 10-20 mm, Angular blocky; 5-10 mm, Angular blocky; Moist; Very weak consistence; 0-2%, Basalt, coarse fragments; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 6.6 (pH meter); Diffuse change to -
B3	1.8 - 2 m	Yellowish red (5YR4/6-Moist); , 10YR56, 10-20% , 5-15mm, Faint; , 10YR64, 10-20% , 5-15mm, Faint; Light clay; Moderate grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Few (<1 per 0.01m2) Coarse (>5mm) macropores, Moist; Very weak consistence; 0-2%, coarse gravelly, 20-60mm, Basalt, coarse fragments; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 6.3 (pH meter);
B3	2 - 2.1 m	Yellowish red (5YR4/6-Moist); , 10YR56, 10-20% , 5-15mm, Faint; , 10YR64, 10-20% , 5-15mm, Faint; Light clay; Moderate grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Few (<1 per 0.01m2) Coarse (>5mm) macropores, Moist; Very weak consistence; 0-2%, coarse gravelly, 20-60mm, Basalt, coarse fragments; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Nodules; Field pH 6.2 (pH meter);
C	2.1 - 2.43 m	Light yellowish brown (10YR6/4-Moist); , 5YR56, 20-50% , 15-30mm, Distinct; , 2.5Y71, 20-50% , 15-30mm, Distinct; Light clay; Weak grade of structure, 10-20 mm, Angular blocky; Moist; Weak consistence; 10-20%, cobbly, 60-200mm, Basalt, coarse fragments; Field pH 6 (pH meter); Abrupt change to -
	2.43 - 2.7 m	Brown (10YR5/3-Moist); , 7.5YR44, 20-50% , 15-30mm, Prominent; , 7.5YR22, 20-50% , 15-30mm, Prominent; Light clay; Weak grade of structure, 10-20 mm, Angular blocky; Weak consistence; 2-10%, cobbly, 60-200mm, Basalt, coarse fragments; Field pH 5.9 (pH meter);
	2.7 - 3 m	Brown (10YR5/3-Moist); , 7.5YR44, 20-50% , 15-30mm, Prominent; , 7.5YR22, 20-50% , 15-30mm, Prominent; Light medium clay; Weak grade of structure, 10-20 mm, Angular blocky; Weak consistence; 2-10%, cobbly, 60-200mm, Basalt, coarse fragments; Field pH 5.8 (pH meter); Diffuse change to -
	3 - 3.3 m	Brown (10YR5/3-Moist); , 7.5YR44, 20-50% , 15-30mm, Prominent; , 7.5YR46, 20-50% , 15-30mm, Prominent; Light clay; Massive grade of structure; Weak consistence; 20-50%, cobbly, 60-200mm, Basalt, coarse fragments; Field pH 5.6 (pH meter);
	3.3 - 3.6 m	Brown (10YR5/3-Moist); , 7.5YR44, 20-50% , 15-30mm, Prominent; , 7.5YR46, 20-50% , 15-30mm, Prominent; Light clay; Massive grade of structure; Weak consistence; 20-50%, cobbly, 60-200mm, Basalt, coarse fragments; Field pH 5.5 (pH meter);

Morphological Notes

Observation Notes

SUGAR EXPERIMENTAL STATION.

Site Notes

BUNDABERG

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable Acidity	CEC	ECEC	ESP
			Ca	Mg	K	Na				
m		dS/m	Cmol (+)/kg							%
0 - 0.1	6.8A	0.054A	7.4B	3	1.9	0.17	1.7D			
0.1 - 0.2	6.8A	0.043A	6.1B	2.3	1.6	0.21	0.55D			
0.2 - 0.3	6.8A	0.054A	5.5B	2	1.9	0.07	0.27D			
0.3 - 0.6	6.8A	0.097A	4.5B	1.2	1.9	0.12	0.76D			
0.6 - 0.9	7A	0.114A	3.7B	1.1	2.2	0.02	0D			
0.9 - 1.2	7A	0.111A								
1.2 - 1.5	7A	0.108A	2.6B	0.6	2	0.17	0D			
1.5 - 1.8	6.6A	0.119A	1.9B	0.9	2.2	0.22	0.18D			
1.8 - 2	6.3A	0.13A								
2 - 2.1	6.2A	0.141A								
2.1 - 2.43	6A	0.146A	2.7B	0.45	3	0.34	3.7D			
2.43 - 2.7	5.9A	0.105A								
2.7 - 3	5.8A	0.073A	4.6B	0.72	1.6	0.7	2.4D			
3 - 3.3	5.6A	0.059A	4.8B	1.1	1	0.8	3.4D			
3.3 - 3.6	5.5A	0.065A								

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size Analysis				
								GV	CS	FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.1		2.38A	160A 110B	0.37A	0.24B	0.2A	1.38	11	19C	9	10	58
0.1 - 0.2		1.86A	69A 40B	0.26A	0.2B	0.19A		5	14C	8	10	64
0.2 - 0.3		1.57A	49A 25B	0.23A	0.18B	0.2A	1.53	1	11C	8	10	68
0.3 - 0.6		0.87A										
0.6 - 0.9				0.19A	0.071B	0.19A		3	11C	18	25	48
0.9 - 1.2												
1.2 - 1.5				0.23A	0.043B	0.2A		8	18C	14	21	47
1.5 - 1.8				0.21A	0.037B	0.22A		15	14C	11	22	56
1.8 - 2												
2 - 2.1								2	10C	11	29	51
2.1 - 2.43								21	6C	12	30	54
2.43 - 2.7												
2.7 - 3								12	3C	8	26	64
3 - 3.3												
3.3 - 3.6												

Depth	COLE	Gravimetric/Volumetric Water Contents						K sat	K unsat
		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar	
m		g/g - m3/m3						mm/h	mm/h
0 - 0.1				0.41F				0.28H	
0.1 - 0.2									
0.2 - 0.3				0.4F				0.31H	
0.3 - 0.6									
0.6 - 0.9									
0.9 - 1.2									
1.2 - 1.5									
1.5 - 1.8									

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1.8 - 2
2 - 2.1
2.1 - 2.43
2.43 - 2.7
2.7 - 3
3 - 3.3
3.3 - 3.6

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Laboratory Analyses Completed for this profile

10A1	Total sulfur - X-ray fluorescence
15_NR_H	Hydrogen Cation - meq per 100g of soil - Not recorded
15A2_CA	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_K	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_MG	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_NA	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
17A1	Total potassium - X-ray fluorescence
2_LOI	Loss on Ignition (%)
2A1	Air-dry moisture content
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
5A2	Chloride - 1:5 soil/water extract, automated colour
6A1	Organic carbon - Walkley and Black
7_NR	Total nitrogen (%) - Not recorded
9A1	Total phosphorus - X-ray fluorescence
9B_9C	Available P (mg/kg) - Bicarbonate P - 0.5M NaHCO3 extractable
9G_BSES	Available P (mg/kg) - Acid P - 0.005M H2SO4 (BSES)
P10_GRAV	Gravel (%)
P10_NR_C	Clay (%) - Not recorded
P10_NR_CS	Coarse sand (%) - Not recorded
P10_NR_FS	Fine sand (%) - Not recorded
P10_NR_Z	Silt (%) - Not recorded
P3A1	Bulk density - g/cm3
P3B3VLe004	0.04 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on suction plate
P3B3VLe01	0.1 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on suction plate
P3B3VLe03	0.3 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on suction plate
P3B3VLe06	0.6 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on pressure plate
P3B3VLe15	15 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on pressure plate
P3B3VLe2	2 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on pressure plate
P3B3VLe7	7 BAR Moisture m3/m3 - Volumetric using undisturbed 60mm diameter and 34mm height core on pressure plate