

DEEP CALCAREOUS CLAY LOAM

General Description: *Deep, dark friable clay loam, becoming more clayey and calcareous with depth*

Landform: Alluvial flats

Substrate: Variable alluvium or buried soils. At type site the soil is shallow over a buried rubbly calcareous clay loam.

Vegetation: Blue gum / red gum woodland



Type Site: Site No.: CU014

1:50,000 sheet: 6531-1 (Laura)

Hundred:

Booyoolie

Annual rainfall: 425 mm

Sampling date:

31/08/92

Landform: Lower slope of an undulating rise, 1% slope

Surface: Firm with no stone

Soil Description:

Depth (cm)	Description
0-10	Dark reddish brown strongly granular moderately calcareous clay loam. Clear to:
10-30	Reddish brown well structured friable moderately calcareous heavy clay loam. Clear to:
30-75	Black well structured moderately calcareous clay loam. Diffuse to:
75-90	Reddish brown highly calcareous light clay with up to 60% rubbly calcrete. Gradual to:
90-140	Yellowish red and red highly calcareous light clay with 20% rubbly calcrete.



Classification: Ceteric, Pedal, Hypocalcic Calcarosol; non-gravelly, clay loamy / clay loamy, shallow overlying Endohypersodic, Pedal, Supracalcic Calcarosol; thick, non-gravelly, clay loamy / clayey, deep

Summary of Properties

Drainage	Moderately well drained, but high ground water table keeps lower part of soil wet for extended periods.
Fertility	Very high, as indicated by the exchangeable cation data. Organic carbon levels are high and concentrations of nutrient elements other than phosphorus are adequate.
pH	Slightly alkaline in surface, grading to alkaline with depth.
Rooting depth	120 cm at type site, although there is very sparse growth below 90 cm.
Barriers to root growth	
Physical:	There are no physical barriers to root growth, due to the excellent structure of the soil.
Chemical:	The Class III A carbonate layer from 90 cm restricts root development. The moderately high salinity from 75 cm (caused by the high groundwater table) also affects root growth to some degree.
Water holding capacity	160 mm in root zone (very high).
Seedling emergence	No restrictions due to the well structured surface.
Workability	Good, although surface may become sticky when wet.
Erosion Potential	
Water:	Low.
Wind:	Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.0	7.7	1.7	0.18	0.78	2.1	19	1205	-	2.9	1.0	5.8	12	2.0	27.8	22.4	2.5	0.22	3.18	0.8
0-10	8.0	7.7	1.7	0.19	0.86	2.0	16	1220	-	3.0	1.0	5.9	13	1.8	27.6	21.9	2.4	0.23	3.30	0.8
10-30	8.2	7.9	1.8	0.15	0.50	1.0	5	707	-	2.1	1.3	7.0	6.1	0.7	26.8	20.2	2.8	0.27	1.95	1.0
30-75	8.1	7.8	0.2	0.39	2.65	1.1	<5	414	-	3.8	1.1	8.7	5.7	0.2	27.9	18.6	8.2	1.49	1.44	5.3
75-90	8.4	8.2	18.8	1.42	9.70	0.6	<5	562	-	8.5	0.9	7.7	1.9	0.2	22.1	8.2	11.7	2.88	1.77	13.0
90-140	8.6	8.2	55.4	1.14	9.20	0.1	8	398	-	8.3	0.5	4.9	0.8	0.2	12.6	3.3	8.0	2.04	0.99	16.2

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.

CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.