

SANDY LOAM OVER POORLY STRUCTURED DARK CLAY

General Description: *Greyish sandy loam surface soil, paler coloured with depth, overlying a dark coloured, sometimes mottled clayey subsoil which is calcareous with depth*

Landform: Alluvial flats and terraces

Substrate: Alluvial sandy clays to clays

Vegetation: Red gum woodland



Type Site: Site No.: CU016

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

Hundred:

Booyoolie

Annual rainfall: 455 mm

Sampling date:

31/08/92

Landform: Alluvial flat of the Rocky River, 0% slope

Surface: Hard setting with no stones

Soil Description:

Depth (cm)	Description
0-10	Dark brown weakly granular sandy loam. Clear to:
10-30	Pale grey massive light sandy clay loam. Clear to:
30-85	Very dark grey medium clay with strong blocky structure. Gradual to:
85-130	Very dark grey medium clay with strong prismatic structure and minor soft carbonate segregations and gypsum crystals.



Classification: Hypocalcic, Subnatric, Black Sodosol; thick, non-gravelly, loamy / clayey, deep

Summary of Properties

Drainage	Moderately well to imperfect, due to low permeability subsoil clay (sodic) and seasonally high ground water table. Soil may remain wet for several weeks.
Fertility	Natural fertility is moderate to high, as indicated by the high CEC of the subsoil. The surface soil has low clay and organic matter content (resulting in a low CEC), and therefore has a low nutrient retention capacity and has low nitrogen reserves.
pH	Acidic at the surface grading to slightly alkaline in the subsoil.
Rooting depth	130 cm in the pit, but there is little growth below 85 cm.
Barriers to root growth	
Physical:	The strength of the subsoil clay, caused by its high exchangeable sodium, may restrict root proliferation, as will the hard dense surface soil.
Chemical:	Moderate salinity and high sodicity below 85 cm may affect root growth.
Water holding capacity	155 mm in rootzone (high), but a third of this may be unavailable to roots due to their sparse distribution.
Seedling emergence	Good to fair, as surface soil may seal over due to poor structure caused by low organic matter content and sodic clay.
Workability	Fair due to narrow moisture range for effective working due to poor structure.
Erosion Potential	
Water:	Low due to flatness of land.
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	6.0	5.5	0	0.07	0.32	1.1	47	387	-	1.4	0.4	116	12	1.3	5.6	3.6	0.6	0.23	0.59	4.1
0-10	5.8	5.3	0	0.06	0.21	1.1	50	640	-	0.9	0.6	137	13	1.4	4.9	3.2	0.5	0.21	0.71	4.3
10-30	6.2	5.8	0	0.05	0.20	0.4	21	913	-	0.7	0.9	57	8.5	0.2	5.8	4.2	0.9	0.19	0.32	3.3
30-85	7.7	6.9	0	0.12	0.50	0.7	<5	348	-	3.3	1.7	34	11	0.1	26.7	11.9	8.9	3.71	0.72	14
85-130	7.9	7.8	0.4	1.9	6.02	0.7	22	424	-	6.6	1.3	18	2.0	0.2	33.1	15.1	10.9	7.17	1.00	22

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.