

CALCAREOUS SANDY LOAM

General Description: *Calcareous sandy loam to sandy clay loam, becoming gradually more clayey and calcareous with depth, overlying a Class I carbonate layer formed in clay*

Landform: Flats and swales in and adjacent to low dune fields of the Gulf Plains

Substrate: Pleistocene age clay mantled by soft carbonate

Vegetation: Mallee



Type Site: Site No.: CU021

1:50,000 sheet:	6531-3 (Crystal Brook)	Hundred:	Pirie
Annual rainfall:	360 mm	Sampling date:	16/12/92
Landform:	Swale between very low sandhills		
Surface:	Firm with no stones		

Soil Description:

Depth (cm)	Description
0-10	Reddish brown soft massive highly calcareous light sandy clay loam. Gradual to:
10-25	Reddish brown firm massive highly calcareous sandy clay loam. Clear to:
25-40	Reddish brown firm massive highly calcareous heavy sandy clay loam. Clear to:
40-70	Yellowish red firm massive very highly calcareous light clay with 20% soft and nodular carbonate segregations. Gradual to:
70-100	Yellowish red firm massive very highly calcareous light medium clay with 20-50% soft and nodular Class I carbonate segregations. Diffuse to:
100-140	Red firm weakly angular blocky very highly calcareous medium clay with 20-50% soft Class I carbonate segregations.



Classification: Endohypersodic, Regolithic, Hypercalcic Calcarosol; thick, non-gravelly, loamy / clayey, deep

Summary of Properties

Drainage	Well drained. The soil is unlikely to remain wet for more than a few days.
Fertility	Moderate natural fertility. High pH induces some deficiencies, including trace elements and phosphorus (which is low at type site).
pH	Alkaline at surface, strongly alkaline from 70 cm.
Rooting depth	100 cm in pit.
Barriers to root growth	
Physical:	None.
Chemical:	High boron, ESP and pH from 70 cm impede root growth.
Water holding capacity	140 mm in root zone, but 20-40 mm is effectively unavailable because of low root density in the clay.
Seedling emergence	Good.
Workability	Good.
Erosion Potential	
Water:	Low.
Wind:	Moderately 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	8.4	7.9	2	0.12	0.47	0.93	7	510	-	1.8	-	-	-	-	10.1	10.7	1.26	0.08	1.25	0.8
0-10	8.3	7.9	3	0.11	0.39	0.92	9	470	-	1.8	-	-	-	-	9.6	9.17	1.00	0.08	1.05	0.8
10-25	8.4	8.0	7	0.12	0.33	0.61	4	380	-	2.1	-	-	-	-	12.9	12.3	1.98	0.15	0.93	1.2
25-40	8.6	8.0	13	0.11	0.21	0.33	4	120	-	2.9	-	-	-	-	10.8	10.4	3.74	0.27	0.30	2.5
40-70	8.9	8.1	18	0.15	0.18	0.18	<2	100	-	4.8	-	-	-	-	9.2	6.86	5.09	0.80	0.32	8.7
70-100	9.9	8.6	29	0.63	0.72	0.10	<2	190	-	33.1	-	-	-	-	8.7	1.62	4.74	5.43	0.55	62.4
100-140	9.9	8.7	34	0.89	2.11	0.06	<2	260	-	30.8	-	-	-	-	9.7	1.66	4.53	7.38	0.68	76.1

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.