

CALCAREOUS LOAM

General Description: *Calcareous loam grading to a very highly calcareous clay loam with minor hard carbonate over alluvium*

Landform: Alluvial plains.

Substrate: Medium textured alluvium with variable water worn gravels and sporadic gypsum crystals.

Vegetation: Mallee scrub



Type Site: Site No.: CL016
1:50,000 sheet: 6729-2 (Sandleton) Hundred: Anna
Annual rainfall: 300 mm Sampling date: 16/03/95
Landform: Flat plain, 0% slope
Surface: Soft with minor calcrete stones

Soil Description:

Depth (cm)	Description
0-16	Dark reddish brown calcareous loam with moderate granular structure. Clear to:
16-29	Reddish brown highly calcareous fine sandy loam with minor calcrete nodules. Clear to:
29-46	Orange very highly calcareous fine sandy clay loam with 10-20% calcrete nodules. Clear to:
46-80	Reddish brown very highly calcareous soft clay loam. Clear to:
80-115	Orange very highly calcareous soft clay loam with minor quartz gravel. Sharp to:
115-132	Orange very highly calcareous soft clay loam with minor soft gypsum. Clear to:
132-170	Orange very highly calcareous soft clay loam with 30% calcrete nodules. Sharp to:
170-190	Orange highly calcareous sandy clay loam with 50% ironstone and slate gravel, and minor gypsum crystals.



Classification: Hypervescent, Regolithic, Hypercalcic Calcarosol; medium, non-gravelly, loamy/clay loamy, moderate

Summary of Properties

Drainage	Well drained. The soil is never likely to remain wet form more than a day or so.
Fertility	Inherent fertility is moderate - the high carbonate levels tend to tie up phosphorus and trace elements. Phosphorus levels are high (stored, not being used). Potassium very high, more than five times required level. Organic carbon is very high (low levels of biological activity in highly calcareous soils). Sulphur is high. Possible zinc and manganese deficiencies (lime induced).
pH	Alkaline at surface, strongly alkaline to the base of the rootzone.
Rooting depth	Approximately 40 cm in pit.
Barriers to root growth	
Physical:	There are no apparent physical barriers.
Chemical:	High pH (more than pH 9.2 below 16 cm), high salinity (more than 8 dS/m below 30 cm), high sodicity (more than 25% from 16 cm) and high boron (more than 15 mg/kg from 29 cm).
Water holding capacity	Approximately 70 mm in the root zone.
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	8.3	8.0	9.4	3.4	21.6	2.8	60	1001	242	5.9	-	-	-	-	28.4	17.52	4.51	5.33	3.50	18.7
0-16	8.8	8.1	10.7	0.6	4.5	2.6	43	990	32	5.6	-	-	-	-	27.5	18.06	4.64	3.10	3.46	11.2
16-29	9.4	8.5	20.7	0.8	5.8	1.3	10	494	34	12.0	-	-	-	-	21.3	9.27	7.28	5.92	1.90	27.7
29-46	9.6	8.8	36.1	2.0	13.3	0.7	12	362	165	51.5	-	-	-	-	17.6	3.68	7.63	8.54	1.40	48.5
46-80	9.5	8.8	43.4	2.8	18.9	0.5	10	323	324	58.1	-	-	-	-	15.8	3.06	6.13	8.51	1.19	53.8
80-115	9.4	8.7	27.0	2.6	19.9	0.4	9	381	414	66.1	-	-	-	-	19.1	4.31	6.08	10.23	1.55	53.6
115-132	8.6	8.4	25.0	5.2	19.1	0.4	8	360	4055	66.5	-	-	-	-	19.5	9.65	5.84	8.67	1.42	44.4
132-170	8.6	8.4	31.8	4.6	18.0	0.4	11	315	2582	57.4	-	-	-	-	18.1	6.40	4.78	8.41	1.19	46.4
170-190	8.7	8.5	25.9	3.5	17.7	1.3	12	268	1425	46.7	-	-	-	-	15.0	5.86	4.30	6.77	1.01	45.1

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.