

CALCAREOUS CLAY LOAM

General Description: *Calcareous clay loam grading to a well structured highly calcareous clay with abundant soft carbonate segregations, overlying a reddish coarsely structured heavy clay*

Landform: Gently sloping rises and outwash fans

Substrate: Heavy red clay with coarse blocky structure

Vegetation: Mallee scrub



Type Site: Site No.: CM057

1:50,000 sheet: 6530-1 (Koolunga)

Hundred: Koolunga

Annual rainfall: 400 mm

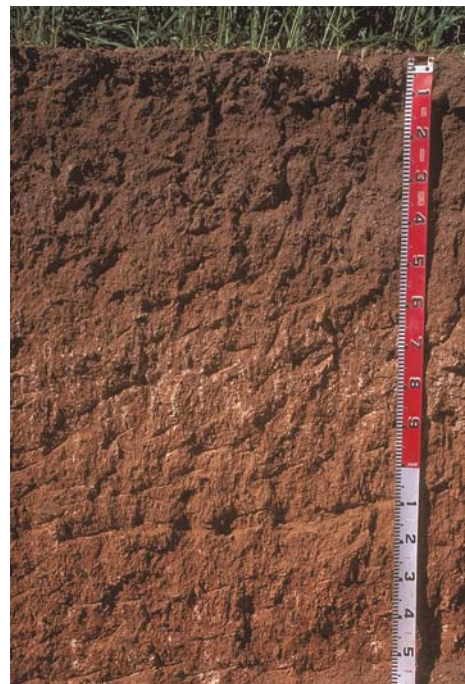
Sampling date: 18/08/95

Landform: Lower slope of a very gently inclined outwash fan, 2% slope

Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
0-12	Dark reddish brown highly calcareous clay loam with moderate granular structure. Clear to:
12-25	Dark reddish brown highly calcareous light clay with weak coarse prismatic structure, breaking to polyhedral. Gradual to:
25-45	Dark reddish brown very highly calcareous light clay (as above) with minor carbonate nodules. Gradual to:
45-65	Reddish brown light clay (as above). Gradual to:
65-100	Yellowish red very highly calcareous light medium clay with 10-20% soft carbonate segregations. Diffuse to:
100-160	Red highly calcareous medium heavy clay with strong blocky structure and up to 20% soft carbonate and manganese segregations.



Classification: Hypervescent, Pedal, Hypercalcic Calcarosol; medium, non-gravelly, clay loamy/clayey, deep

Summary of Properties

Drainage	Well drained. The soil is unlikely to remain wet for more than a few days.
Fertility	The soil's natural fertility is high (as indicated by the exchangeable cation data). All elements except sulphur (very low) are in adequate supply. The high potassium levels may be inducing a magnesium deficiency. The level of organic carbon (nitrogen store) is satisfactory.
pH	Alkaline throughout.
Rooting depth	160 cm in pit, but few roots below 100 cm.
Barriers to root growth	
Physical:	There is a plough pan at 12 cm which may affect newly developed roots. There are no other physical barriers.
Chemical:	High boron from 100 cm, but this is below normal depth of rainfall penetration.
Water holding capacity	Approximately 140 mm in root zone (very high).
Seedling emergence	Moderate to good (sealing surface).
Workability	Good, provided organic matter levels are maintained.
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	8.3	7.9	8.7	0.12	0.47	1.4	29	587	9	1.9	0.92	-	10.7	1.36	19.4	18.11	2.07	0.18	1.87	0.9
0-12	8.3	7.9	8.5	0.12	0.46	1.3	27	628	8	2.0	-	-	-	-	21.0	19.90	2.18	0.16	2.05	0.8
12-25	8.4	7.9	7.8	0.12	0.31	0.6	6	340	10	1.9	-	-	-	-	21.3	19.58	2.37	0.19	1.22	0.9
25-45	8.4	7.9	13.9	0.13	0.52	0.4	4	134	6	1.7	-	-	-	-	19.6	17.43	2.86	0.28	0.53	1.4
45-65	8.5	7.9	17.3	0.12	0.41	0.3	<4	118	8	2.0	-	-	-	-	17.3	15.11	3.95	0.36	0.50	2.1
65-100	8.7	8.0	30.0	0.16	0.52	0.2	<4	131	23	3.9	-	-	-	-	14.3	10.25	6.14	0.67	0.53	4.7
100-160	8.5	8.1	27.0	0.40	1.38	0.1	<4	227	165	19.7	-	-	-	-	17.3	12.19	6.08	1.72	0.85	9.9

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.