

CALCAREOUS CLAY LOAM

General Description: *Calcareous clay loam grading to a well structured highly calcareous red clay with abundant fine carbonate at depth*

Landform: Undulating rises with gently undulating plains.

Substrate: Alluvial sandy clay.

Vegetation: Mallee



Type Site: Site No.: MM085

1:50,000 sheet: 6826-4 (Binnie)

Hundred: Coolinong

Annual rainfall: 440 mm

Sampling date: 1992

Landform: Flat between gently undulating rises

Surface: Firm with no stones

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-7	Dark brown slightly calcareous very hard fine sandy clay loam with moderate granular structure. Abrupt to:
7-20	Red very hard highly calcareous medium clay with strong polyhedral structure. Clear to:
20-40	Yellowish red highly calcareous very hard weakly structured medium clay. Clear to:
40-70	Reddish yellow very highly calcareous hard massive sandy medium clay. Gradual to:
70-130	Reddish yellow very highly calcareous massive light sandy clay loam with 20-50% calcrete fragments. Diffuse to:
130-202	Reddish yellow very highly calcareous massive sandy clay loam with 2-10% calcrete fragments. Sharp to:
202-225	Red and light olive grey hard massive sandy clay.



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

Summary of Properties

Drainage	Moderately well drained. Soil may remain saturated for up to a week at a time following heavy or prolonged rainfall.
Fertility	Inherent fertility is high, as indicated by the exchangeable cation data. Regular phosphorus applications are essential. Nitrogen levels depend on legume content of pastures. Zinc and copper are required occasionally. Organic carbon levels are high at sampling site.
pH	Alkaline throughout.
Rooting depth	70 cm in pit.
Barriers to root growth	
Physical:	The clayey subsoil presents a slight restriction.
Chemical:	There are no chemical barriers. Low nutrient retention capacity below 70 cm may inhibit deep root growth.
Water holding capacity	115 mm in root zone.
Seedling emergence:	Satisfactory, although surface wetness and sealing may affect establishment in wet years.
Workability:	Firm to hard setting surface can be damaged if worked too wet or too dry.
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	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	7.4	7.0	2	0.18	0.57	2.3	6.6	730	2.7	-	-	-	-	32.0	25.16	4.05	0.50	2.35	1.6
0-7	7.5	7.1	2	0.22	0.67	2.4	4.8	860	2.4	-	-	-	-	32.6	24.77	3.85	0.41	2.46	1.3
7-20	7.9	7.5	9	0.20	0.36	0.79	2.4	470	1.5	-	-	-	-	46.4	36.33	6.36	0.68	1.57	1.5
20-40	8.4	7.8	32	0.17	0.29	0.57	2.4	250	1.4	-	-	-	-	34.7	28.83	6.46	0.78	0.81	2.2
40-70	8.6	7.8	41	0.17	0.28	0.28	2.0	150	1.2	-	-	-	-	24.8	18.38	5.83	1.07	0.47	4.3
70-130	9.2	8.2	22	0.17	0.43	0.10	<2.0	86	0.6	-	-	-	-	9.8	6.24	3.60	1.32	0.22	13.5
130-202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
202-225	9.4	8.6	1	0.36	0.95	0.02	2.6	690	2.5	-	-	-	-	12.4	2.71	6.29	4.20	0.54	33.9

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.