

CALCAREOUS SANDY LOAM

General Description: *Calcareous sandy loam, becoming more clayey and calcareous with depth, grading to a clayey substrate*

Landform: Flat alluvial plains.

Substrate: Clayey alluvial sediments mantled by fine grained carbonate.

Vegetation: Mallee.



Type Site:	Site No.:	CU070	1:50,000 mapsheet:	6531-3 (Crystal Brook)
	Hundred:	Wandearah	Easting:	223560
	Section:	120	Northing:	6297960
	Sampling date:	10/02/2005	Annual rainfall:	355 mm average

Flat with soft (undisturbed stubble) surface and no stones.

Soil Description:

Depth (cm)	Description
0-10	Dark brown friable highly calcareous sandy loam, with a strong plough pan at 10 cm. Sharp to
10-30	Dark brown friable very highly calcareous loam. Gradual to:
30-50	Strong brown friable very highly calcareous light clay loam. Gradual to:
50-100	Strong brown friable highly calcareous clay loam with weak coarse blocky structure and minor calcrete nodules. Diffuse to:
100-150	Yellowish red firm highly calcareous light clay with moderate subangular blocky structure and 10-20% fine carbonate segregations. Diffuse to:
150-210	Yellowish red firm moderately calcareous light medium clay with strong angular blocky structure, 2-10% soft carbonate and 2-10% manganese segregations.



Classification: Epihypersodic, 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 day or so following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. The carbonate in the surface soil tends to tie up phosphorus, manganese and zinc, but not to the same degree as very highly calcareous soils with carbonate contents exceeding 8-10%. Laboratory data indicate that phosphorus levels are marginal. Trace element levels appear satisfactory, but tissue testing is required to make fertilizer recommendations.

pH: Alkaline at the surface, strongly alkaline with depth.

Rooting depth: 70 cm in sampling pit, with strong growth to 50 cm.

Barriers to root growth:

Physical: There are no apparent physical barriers. A strong plough pan at 10 cm can be removed by variable depth tillage.

Chemical: High sodicity from 50 cm and moderately high salinity from 30 cm restrict root growth

Waterholding capacity: Approximately 85 mm in the potential rootzone.

Seedling emergence: Satisfactory.

Workability: Calcareous sandy loams are easily worked over a wide range of moisture conditions.

Erosion Potential:

Water: Low.

Wind: Moderately low. Calcareous sandy loams are easily pulverized by livestock trampling or excessive cultivation, making them vulnerable to sweeping.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
Paddock	8.6	7.8	5.0	0.24	2.2	1.28	23	656	143	9.0	1.2	1.06	3.4	2.19	17.9	18.5	14.8	1.83	0.30	1.58	1.6
0-10	8.4	8.0	3.2	0.31	2.9	1.40	23	661	151	9.0	1.1	1.10	5.4	9.53	18.2	18.5	15.0	1.60	0.27	1.64	1.5
10-30	8.8	8.0	17.0	0.29	1.8	0.88	4	550	178	7.2	1.3	1.48	5.6	4.73	6.13	23.2	18.0	3.22	0.63	1.37	2.7
30-50	8.6	8.2	29.9	1.30	11.4	0.50	3	217	1434	56	1.6	1.28	5.6	3.98	3.12	26.1	14.0	6.72	4.85	0.52	18.6
50-100	9.2	8.5	29.5	1.52	12.3	0.24	2	208	1514	132	6.6	1.11	6.6	4.87	1.60	24.2	9.31	6.76	7.53	0.63	31.1
100-150	9.3	8.6	9.4	1.46	10.2	0.09	2	315	1418	159	8.5	0.88	8.3	5.19	3.03	24.3	7.04	6.89	9.58	0.81	39.4
150-210	9.1	8.5	3.6	1.53	9.8	0.08	2	257	1649	211	6.2	0.93	14	5.29	17.9	23.6	6.46	6.60	9.89	0.68	41.9

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.
Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), 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, in this case estimated by the sum of cations.

Further information: [DEWNR Soil and Land Program](#)

