

CALCAREOUS SANDY LOAM

General Description: *Calcareous sandy loam becoming more clayey, calcareous and rubbly with depth*

Landform: Flats and rises in an undulating landscape.

Substrate: Calcrete and carbonate capped medium grained Tertiary sediments.

Vegetation: Mallee.



Type Site: Site No.: MM027

1:50,000 sheet: 6727-1 (Mobilong) Hundred: Burdett

Annual rainfall: 300 mm Sampling date: 1992

Landform: Lower slope of an undulating rise

Surface: Firm with 10-20% calcrete fragments, 6-60 mm

Soil Description:

Depth (cm)	Description
0-10	Dark brown highly calcareous light sandy clay loam with moderate granular structure and minor calcrete fragments. Clear to:
10-35	Dark brown very highly calcareous sandy clay loam with 20-50% calcrete fragments. Diffuse to:
35-80	Brown very highly calcareous sandy clay loam with more than 50% carbonate nodules. Diffuse to:
80-140	Light brown very highly calcareous light clay with 20-50% carbonate nodules. Diffuse to:
140-220	Reddish yellow very highly calcareous sandy clay with 2-10% carbonate nodules. Diffuse to:
220-250	Reddish yellow very highly calcareous sandy clay loam.



Classification: Epihypersodic, Regolithic, Lithocalcic Calcarosol; thick, gravelly, loamy / clay loamy, very deep

Summary of Properties

Drainage Well drained. Calcrete may restrict water percolation for a few days after heavy rain.

Fertility Inherent fertility is moderately low, as indicated by the exchangeable cation data. Organic carbon levels are high, augmenting nutrient retention capacity. Phosphorus, nitrogen and zinc deficiencies can be expected, with manganese deficiency a possible problem in wet years.

pH Alkaline at the surface, strongly alkaline with depth.

Rooting depth 80 cm in pit.

Barriers to root growth

Physical: Calcrete boulders restrict root growth in places.

Chemical: High pH and high sodicity from 35 cm affect root growth. High salinity and boron from 80 cm prevent any further growth.

Water holding capacity 60 mm in root zone.

Seedling emergence: Satisfactory. Stoniness may be a slight problem in places.

Workability: Soft / firm surface is easily worked, but stones interfere with tillage in places, abrade implements, and are continually brought to the surface by cultivation.

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	
0-10	8.6	7.8	8	0.12	0.75	1.5	8	410	2.2	0.27	-	10	0.28	10.1	9.55	1.71	0.10	1.09	1.0
10-35	8.7	7.9	22	0.14	0.67	1.1	4	280	2.5	0.43	-	5.2	0.06	9.5	9.10	2.33	0.22	0.86	2.3
35-80	9.6	8.3	43	0.44	3.38	0.5	<2	460	5.4	0.42	-	2.3	0.07	6.3	3.51	2.17	1.84	1.29	29.2
80-140	9.3	8.7	54	2.86	31.5	0.1	3	700	30	0.27	-	0.87	<0.06	5.0	1.09	1.72	2.48	1.80	49.6
140-220	10.0	8.6	37	0.83	6.41	<0.1	<2	600	22	0.30	-	0.88	<0.06	5.7	1.04	1.31	3.33	1.53	58.4
220-250	10.1	8.5	18	0.40	1.25	<0.1	<2	500	16	0.21	-	1.1	0.17	6.2	1.20	1.23	3.11	1.35	50.2

Note: 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.