

SHALLOW CALCAREOUS SANDY LOAM OVER CALCRETE

General Description: *Calcareous sandy loam with variable rubble and slight clay increase with depth over calcrete at shallow depth*

Landform: Flats between undulating rises.

Substrate: Sheet or heavy boulder calcrete grading to medium textured highly calcareous material with decreasing calcrete fragments. Tertiary sediments at depth.

Vegetation: Mallee



Type Site: Site No.: MM020
 1:50,000 sheet: 6727-1 (Mobilong) Hundred: Burdett
 Annual rainfall: 325 mm Sampling date: 31/10/91
 Landform: Stony flat between undulating rises
 Surface: Firm with more than 50% calcrete stones of 20-200 mm

Soil Description:

Depth (cm)	Description
0-9	Dark brown highly calcareous sandy loam with 2-10% calcrete fragments, 6-200 mm. Abrupt to:
9-15	Brown highly calcareous light sandy clay loam with 20-50% calcrete fragments, 20-200 mm. Clear to:
15-25	Brown very highly calcareous sandy clay loam with more than 50% calcrete fragments, 20-200 mm. Abrupt to:
25-55	Rubbly calcrete pan. Abrupt to:
55-95	Sheet calcrete pan. Clear to:
95-135	Yellowish red very highly calcareous sandy clay loam with 20-50% calcrete fragments, 20-60 mm. Clear to:
135-160	Sheet / rubbly calcrete pan.



Classification: Endohypersodic, Petrocalcic, Lithocalcic Calcarosol; medium, very gravelly, loamy / clay loamy, shallow

Summary of Properties

Drainage	Well drained. Calcrete may restrict water entry for a few days.
Fertility	Inherent fertility is moderately low, as indicated by the exchangeable cation data. High organic carbon levels and about 20% clay provide reasonable nutrient retention capacity. Phosphorus, zinc and copper appear to be marginally deficient at sampling site.
pH	Alkaline throughout.
Rooting depth	55 cm in pit, but few roots penetrate calcrete at 25 cm.
Barriers to root growth	
Physical:	The calcrete virtually prevents root growth.
Chemical:	High pH, sodicity and salinity from 95 cm, but out of range of roots.
Water holding capacity	15 mm.
Seedling emergence:	Slight limitations due to stoniness.
Workability:	Firm surface is easily worked, but stones abrade implements and may interfere with harvest operations. Cultivation continually brings stone to the surface.
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	8.6	7.9	3	0.12	0.67	1.5	18	390	0.9	0.14	5.5	5.6	0.32	13.1	11.88	1.39	0.19	1.03	1.5
0-9	8.5	7.8	3	0.12	0.78	1.2	16	350	0.7	0.18	6.7	10	0.25	10.3	9.68	1.01	0.16	0.89	1.6
9-15	8.7	7.9	2	0.14	0.91	0.6	4	270	0.6	0.23	8.5	4.8	<0.06	10.9	9.67	1.91	0.30	0.80	2.8
15-25	8.8	8.1	8	0.38	3.01	0.8	5	210	1.6	0.13	4.9	5.3	0.38	9.2	7.85	2.59	0.81	0.59	8.8
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95-135	9.7	8.6	34	1.53	14.30	0.2	2	780	1.4	-	-	-	-	8.0	2.02	2.22	4.37	1.79	54.6

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.