

SHALLOW SANDY LOAM OVER CALCRETE

General Description: *Calcareous sandy loam with variable rubble over calcrete at shallow depth*

Landform: Gently undulating plains and rises

Substrate: Calcrete capped highly calcareous sand overlying Pleistocene age clay.

Vegetation: Mallee



Type Site: Site No.: MP008

1:50,000 sheet: 6728-1 (Cambrai)

Hundred: Angas

Annual rainfall: 300 mm

Sampling date: 04/08/92

Landform: Flat on a gently undulating plain

Surface: Loose (cultivated) with 20-50% calcrete stone to 200 mm diameter

Soil Description:

Depth (cm)	Description
0-11	Loose red sandy loam. Abrupt to:
11-26	Soft red sandy loam. Clear to:
26-57	Soft highly calcareous sandy loam with 70% carbonate nodules to 20 mm. Sharp to:
57-85	Calcrete pan. Clear to:
85-145	Pink highly calcareous loamy coarse sand with 75% carbonate nodules to 20 mm. Gradual to:
145-180	Reddish yellow highly calcareous sandy clay loam with 30% carbonate nodules to 6 mm. Gradual to:
180-210	Red and grey mottled firm sandy light clay with coarse prismatic structure and 20% carbonate nodules.



Classification: Lithocalcic, Petrocalcic, Calcenic Tenosol; medium, moderately gravelly, loamy / loamy, moderate

Summary of Properties

Drainage	Rapidly drained. The soil is unlikely to remain wet for more than a few hours following heavy or prolonged rainfall.
Fertility	Natural fertility is low due to low clay content. Phosphorus and possibly zinc are deficient at the sampling site, and organic carbon levels are low.
pH	Alkaline throughout.
Rooting depth	57 cm in pit.
Barriers to root growth	
Physical:	The calcrete is a major restriction and marks the base of the potential root zone.
Chemical:	There are no chemical barriers above the calcrete.
Water holding capacity	Approximately 50 mm above the calcrete.
Seedling emergence:	Good.
Workability:	Good, although surface calcrete interferes with implement operation.
Erosion Potential	
Water:	Low.
Wind:	Moderately low. The surface is sandy, but the stone provides some protection.

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	7.8	7.4	0.1	0.08	0.41	0.57	16	370	1.4	0.2	3.4	3.3	0.4	5.0	4.10	1.12	0.19	0.71	3.8
0-11	7.8	7.5	0.1	0.10	0.47	0.57	17	380	1.1	0.2	4.3	3.3	0.5	4.9	3.78	1.16	0.18	0.66	3.7
11-26	8.1	7.6	0.0	0.07	0.31	0.38	5	310	1.1	0.2	2.2	2.5	0.4	5.4	3.99	1.04	0.18	0.59	3.3
26-57	8.7	8.2	5.4	0.11	0.43	0.60	<5	140	2.0	0.5	5.5	1.0	0.4	4.3	6.68	1.90	0.23	0.29	5.3
57-85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85-145	9.9	8.5	51.4	0.51	1.44	0.52	<5	540	8.5	0.4	0.4	0.2	0.4	7.9	1.58	3.46	6.63	1.35	83.9
145-180	9.9	8.7	49.5	0.57	2.15	0.03	<5	590	11.0	0.4	1.5	0.6	0.2	9.5	0.52	3.33	7.38	1.41	77.7
180-210	9.9	8.9	18.6	0.61	1.45	0.00	<5	760	16.1	0.4	3.0	0.7	0.3	11.2	0.55	4.43	10.04	1.79	90.0

Note: Paddock sample bulked from 20 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