

# SHALLOW CALCAREOUS SANDY LOAM OVER CALCRETE

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

**Landform:** Gently undulating plain

**Substrate:** Calcreted calcarenite of the Bridgewater Formation

**Vegetation:** Mallee



**Type Site:** Site No.: MM067

1:50,000 sheet: 6927-3 (Jabuk)

Hundred: Peake

Annual rainfall: 400 mm

Sampling date: 01/09/92

Landform: Crest of low rise on undulating plain

Surface: Soft with 20-50% calcrete stone (60-200 mm)

## Soil Description:

Depth (cm)	Description
0-10	Brown soft moderately calcareous sandy loam with 2-10% calcrete fragments (60-200 mm). Clear to:
10-30	Brown soft highly calcareous sandy clay loam with more than 50% calcrete fragments (200-600 mm). Abrupt to:
30-55	Very hard laminar calcrete. Abrupt to:
55-90	Hard massive very highly calcareous reddish yellow sandy clay loam. Diffuse to:
90-140	Firm massive very highly calcareous reddish yellow sandy clay with 10-20% yellowish red earthy segregations. Diffuse to:
140-200	Firm massive very highly calcareous reddish yellow sandy clay loam with 20-50% yellowish red earthy segregations.



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

## Summary of Properties

<b>Drainage</b>	Well drained. Soil is never wet for more than a few days.
<b>Fertility</b>	Inherent fertility is moderately low as indicated by the exchangeable cation data. Phosphorus and nitrogen are widely deficient. Copper and zinc deficiencies can be expected and concentrations are low at the sampling site. Manganese may be required on cereals. Organic carbon levels are satisfactory.
<b>pH</b>	Alkaline at the surface, strongly alkaline with depth.
<b>Rooting depth</b>	30 cm in pit, although there are a few roots penetrating the calcrete to 90 cm.
<b>Barriers to root growth</b>	
<b>Physical:</b>	The calcrete effectively prevents further root development.
<b>Chemical:</b>	No chemical barriers above the calcrete.
<b>Water holding capacity</b>	25 mm in root zone.
<b>Seedling emergence:</b>	Satisfactory, although can be reduced by stones.
<b>Workability:</b>	Firm surface is easily worked, but stones interfere with and abrade equipment.
<b>Erosion Potential</b>	
<b>Water:</b>	Low.
<b>Wind:</b>	Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	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	8.7	7.9	2	0.12	0.67	1.1	7	350	2.3	0.1	8.6	3.1	0.28	11.0	9.54	1.32	0.05	0.98	0.5
0-10	8.7	7.8	<1	0.10	0.59	1.0	7	320	2.1	0.08	9.0	3.3	0.16	8.9	7.92	1.20	0.07	0.84	0.8
10-30	8.9	8.1	6	0.16	1.33	0.7	6	220	3.6	0.13	15	1.7	0.12	7.9	6.86	2.44	0.21	0.69	2.7
30-55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55-90	10.2	8.6	42	0.44	3.16	0.1	<2	350	6.2	0.1	1.9	0.35	<0.06	3.5	1.07	2.13	1.93	0.86	55.1
90-140	10.2	8.6	40	0.53	4.4	<0.1	<2	420	9.5	0.11	3.0	0.41	<0.06	3.9	0.73	1.99	2.89	0.98	74.1
140-200	10.3	8.5	11	0.45	2.99	<0.1	<2	330	6.4	0.08	2.3	0.55	<0.06	3.1	0.80	1.37	2.21	0.68	71.3

**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.