

## SANDY LOAM OVER SANDY CLAY ON CALCRETE

**General Description:** *Sandy loam over red or brown sandy clay to clay on calcrete at shallow depth*

**Landform:** Flat to gently undulating plain with occasional sandhills.

**Substrate:** Interbedded lagoonal limestone and clay (Padthaway Formation).

**Vegetation:** Mallee



**Type Site:** Site No.: MM097

1:50,000 sheet:	6926-3 (Tintinara)	Hundred:	Lewis
Annual rainfall:	465 mm	Sampling date:	06/03/93
Landform:	Flat		
Surface:	Firm with 20-50% calcrete stone (60 - 200 mm)		

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-5	Very dark greyish brown soft slightly calcareous sandy loam. Abrupt to:
5-9	Brown friable slightly calcareous light sandy loam. Sharp to:
9-14	Dark brown firm massive slightly calcareous sandy clay. Abrupt to:
14-35	Rubby calcrete with very highly calcareous fine sandy clay loam between the fragments. Sharp to:
35-62	Laminar limestone, indurated with secondary carbonate. Abrupt to:
62-93	Massive limestone. Abrupt to:
93-165	Light olive grey hard sandy medium clay with coarse angular blocky structure. Abrupt to:
165-180	Massive limestone.



**Classification:** Haplic, Lithocalcic, Brown Chromosol; thin, moderately gravelly, loamy / clayey, shallow

## Summary of Properties

<b>Drainage</b>	Moderately to well drained. Soil rarely remains wet for more than a few days.
<b>Fertility</b>	Inherent fertility is moderately low, as indicated by the exchangeable cation data. Regular phosphorus applications are essential. Nitrogen levels depend on legume content of pastures and cropping intensity. Deficiencies of zinc and copper are likely, although levels are adequate at sampling site. Manganese may be needed on cereals. Organic carbon concentrations are low.
<b>pH</b>	Alkaline throughout.
<b>Rooting depth</b>	35 cm in pit.
<b>Barriers to root growth</b>	
<b>Physical:</b>	The calcrete and limestone reduce root growth. Some occurs through the rubbly calcrete, but very little growth occurs into the limestone.
<b>Chemical:</b>	There are no chemical barriers above the limestone.
<b>Water holding capacity</b>	25 mm in the root zone.
<b>Seedling emergence:</b>	Satisfactory.
<b>Workability:</b>	Soft to firm surface is easily worked, but stones can interfere with and abrade equipment.
<b>Erosion Potential</b>	
<b>Water:</b>	Low.
<b>Wind:</b>	Low to moderately 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	8.0	7.4	2	0.07	0.53	0.9	18	100	0.61	0.51	3.9	2	0.8	6.9	5.01	1.19	0.08	0.26	1.2
0-5	8.2	7.6	2	0.10	0.7	1.2	29	180	0.93	0.47	3.8	2.3	4	9.6	7.85	1.64	0.08	0.43	0.8
5-9	8.5	7.7	3	0.06	0.37	0.6	9	110	0.79	0.63	2.5	1.2	1.6	8.7	6.66	1.56	0.08	0.27	0.9
9-14	8.5	7.8	4	0.08	0.43	0.5	3	90	0.8	0.16	4.7	1.0	0.57	13.6	9.35	2.70	0.13	0.31	1.0
14-35	8.6	8.0	25	0.12	0.55	0.8	5	100	1.2	0.16	12	0.75	0.3	16.1	11.44	4.20	0.20	0.36	1.2
35-93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93-165	9.4	8.4	3	0.23	1.46	<0.1	<2	640	3.9	0.06	2.5	0.07	0.07	19.6	0.44	14.15	2.70	1.58	13.8
165-180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**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.