SAND OVER SANDY CLAY ON CALCRETE

General Description: *Loamy sand to sand over a red or brown friable sandy clay on calcrete at shallow depth*

Landform: Flat to gently undulating plain with occasional sandhills

Substrate: Sandy lagoonal limestones and sands (Padthaway Formation).

Vegetation: Mallee heath

Type Site: Site No.: MM098

1:50,000 sheet:	6926-3 (Tintinara)	Hundred:	Lewis
Annual rainfall:	465 mm	Sampling date:	06/03/93
Landform:	Flat		
Surface:	Soft with no stones		

Soil Description:

Depth (cm)	*Description*
0-8	Dark grey brown loose light sandy loam. Clear to:
8-15	Brown loose light sandy loam. Abrupt to:
15-26	Light grey (bleached) loose sand. Sharp to:
26-44	Reddish brown hard sandy clay with coarse columnar structure. Sharp to:
44-53	Pale brown hard massive very highly calcareous sandy clay loam. Abrupt to:
53-70	Light grey laminar calcrete with very highly calcareous sandy clay matrix. Clear to:
70-100	Light brownish grey massive soft calcareous light sandy clay loam. Diffuse to:
100-155	Pale brown soft calcareous loamy sand. Clear to:
155-185	Light brown very hard massive calcareous light sandy loam. Diffuse to:
185-195	Hard limestone.

Classification: Bleached, Calcic, Red Chromosol; medium, non-gravelly, sandy / clayey, moderate

Summary of Properties

Drainage Well drained. Soil never remains wet for more than a few days.

Fertility Inherent fertility is low, as indicated by the exchangeable cation data. Regular phosphorus applications are essential. Nitrogen levels are likely to be low. Deficiencies of zinc and copper are likely, although levels are adequate at sampling site. Manganese may be needed by lupins. Organic carbon concentrations are low.

pH Neutral to slightly acidic at the surface, alkaline with depth.

Rooting depth Some roots to 70 cm, few below 44 cm.

Barriers to root growth

Physical: The calcrete and limestone severely restrict root growth.

Chemical: There are no chemical barriers.

Water holding capacity 50 mm in the root zone

Seedling emergence: Can be reduced by water repellence in dry seasons.

Workability: Loose / soft surface is easily worked.

Erosion Potential

Water: Low.

Wind: Moderately low to moderate.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	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	6.4	6.1	3	0.06	0.46	0.9	12	120	0.66	0.2	18	4.5	0.79	5.4	4.06	0.68	0.13	0.28	2.4
0-8	7.2	6.8	2	0.07	0.61	0.8	13	130	0.72	0.21	14	3.9	1.3	4.9	4.23	0.65	0.06	0.28	1.2
8-15	6.6	6.2	3	0.03	0.34	0.3	7	98	<0.4	0.22	13	3.3	0.3	3.3	2.73	0.39	0.10	0.21	3.0
15-26	7.0	6.7	3	0.02	0.26	0.1	4	62	<0.4	0.08	6.6	0.73	0.1	2.4	1.90	0.28	0.09	0.14	na
26-44	7.8	7.3	3	0.14	0.7	0.4	5	120	0.72	0.09	13	0.53	0.12	14.2	8.82	1.82	0.23	0.38	1.6
44-53	8.7	8.1	19	0.11	0.57	0.3	2	63	<0.4	0.08	14	0.29	0.13	6.8	6.22	1.30	0.17	0.18	2.5
53-70	9.0	8.2	35	0.10	0.44	0.2	<2	88	<0.4	0.1	2.8	0.13	0.16	5.5	4.59	1.39	0.15	0.19	2.7
70-100	9.2	8.2	7	0.08	0.37	<0.1	<2	97	0.43	0.11	1.7	<0.06	0.08	6.7	4.74	1.92	0.23	0.23	3.4
100-155	9.3	8.3	4	0.07	0.32	<0.1	<2	46	0.46	0.05	0.49	0.09	0.1	3.6	2.94	1.30	0.15	0.21	4.2
155-185	9.0	8.2	3	0.15	1.15	<0.1	<2	190	0.89	0.06	1.2	0.07	0.13	11.0	4.05	5.79	0.25	0.49	2.3
185-195	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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.