SHALLOW SAND OVER SANDY CLAY ON CALCRETE

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

Landform: Gently undulating plain with extensive irregular sandhills and sporadic saline depressions.

Substrate: Calcreted Bungunnia Limestone.

Vegetation: Mallee.

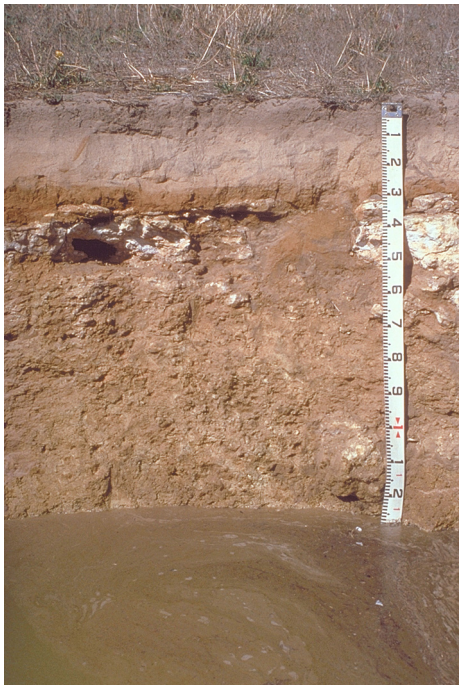
Type Site:

Site No.:	MM118	1:50,000 mapsheet:	6827-3 (Moorlands)
Hundred:	Roby	Easting:	376630
Section:	X1A	Northing:	6078400
Sampling date:	05/04/1993	Annual rainfall:	395 mm average

Flat with a loose surface and no stones.

Soil Description:

Depth (cm)	*Description*
0-10	Dark greyish brown loose loamy sand. Abrupt to:
10-25	Yellowish brown soft sand. Abrupt to:
25-33	Yellowish red hard massive sandy clay. Sharp to:
33-60	Nodular calcrete. Gradual to:
60-100	Brownish yellow hard massive very highly calcareous sandy clay with more than 50% carbonate nodules (60-200 mm). Diffuse to:
100-130	Pale yellow massive very highly calcareous sandy clay with more than 50% carbonate nodules (60-200 mm).
130-	Watertable, with salinity of 12,000 mg/l.



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

Summary of Properties

Drainage: Well drained. Soil rarely remains saturated 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 depend on legume status of pastures. Copper and zinc deficiencies occur occasionally - copper levels are low at sampling site. Manganese is required by lupins. Organic carbon levels are adequate.

pH: Slightly acidic at the surface, alkaline with depth.

Rooting depth: 60 cm in pit.

Barriers to root growth:

Physical: The calcrete restricts root growth to some extent.

Chemical: Fluctuating saline watertable limits root growth.

Waterholding capacity: 35 mm

Seedling emergence: Satisfactory, but can be reduced by water repellence in dry seasons.

Workability: Loose to soft surface is easily worked.

Erosion Potential:

Water: Low.

Wind: Moderately low to moderate.

Laboratory Data

Depth cm	pH H_2O	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	5.8	5.7	0.0	0.07	0.84	1.1	16	169	0.4	0.1	17	2.1	0.6	3.8	3.5	0.7	0.23	0.43	6.1
0-10	6.5	6.5	0.0	0.06	0.52	0.9	11	81	0.3	0.1	18	2.3	0.6	3.1	3.4	0.5	0.21	0.24	6.8
10-25	5.8	5.5	0.0	0.02	0.18	0.2	9	63	0.1	<0.1	12	0.7	0.1	1.8	1.4	0.3	0.20	0.19	na
25-33	7.5	7.4	0.1	0.13	1.25	0.3	6	188	0.8	0.1	12	0.6	0.2	9.7	7.1	1.3	0.46	0.66	4.7
33-60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60-100	8.4	8.0	55.3	0.65	6.77	0.1	<4	235	2.8	0.2	3	0.7	0.2	12.1	9.3	2.7	1.74	0.87	14.4
100-130	8.5	8.1	37.2	0.68	7.19	0.3	<4	290	3.6	0.3	4	3.8	0.2	12.3	8.5	3.2	1.88	1.01	15.3

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.

Further information: DEWNR Soil and Land Program