SHALLOW GRADATIONAL SANDY LOAM OVER CALCRETE

General Description: *Sandy loam grading to a red sandy clay loam over calcrete at shallow depth*

Landform: Flat to gently undulating plain with occasional irregular sandhills, stony rises and salinized depressions.

Substrate: Calcreted calcarenite (Bridgewater Formation).

Vegetation: Mallee

Type Site:

Site No.:	MM113		
1:50,000 sheet:	6827-3 (Moorlands)	Hundred:	Coolinong
Annual rainfall:	385 mm	Sampling date:	31/03/93
Landform:	Flat		
Surface:	Soft with 20-50% calcrete stone (60-200 mm)		

Soil Description:

Depth (cm)	*Description*
0-10	Dark brown soft massive sandy loam with 2-10 % calcrete fragments. Abrupt to:
10-25	Yellowish red firm massive light sandy clay loam with 20-50% calcrete fragments. Clear to:
25-35	Yellowish red firm massive sandy clay loam with 20-50% calcrete fragments. Sharp to:
35-70	Laminar calcrete. Gradual to:
70-100	Rubbly calcrete. Diffuse to:
100-130	Pink hard massive very highly calcareous sandy clay loam.

Classification: Haplic, Petrocalcic, Red Kandosol; medium, moderately gravelly, loamy / clay loamy, shallow

Summary of Properties

Drainage Well drained. Soil rarely remains saturated for more than a few days.

Fertility Inherent fertility is moderately low, as indicated by the exchangeable cation data. Regular phosphorus applications are needed. Nitrogen content depends on legume status of pastures and cropping intensity. Occasional deficiencies of copper and zinc are likely. Manganese is needed by cereals. Organic carbon levels are adequate at sampling site.

pH Alkaline at the surface, strongly alkaline with depth.

Rooting depth 35 cm in pit.

Barriers to root growth

Physical: The calcrete effectively prevents further downward root growth.

Chemical: There are no chemical barriers above the calcrete.

Water holding capacity 25 mm in root zone.

Seedling emergence: Satisfactory except where very stony.

Workability: Soft to firm surface is easily worked, but stones interfere with and abrade equipment.

Erosion Potential

Water: Low.

Wind: Low.

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	7.7	7.2	<1	0.09	0.77	1.1	10	210	0.89	0.16	8.3	4.2	0.60	7.9	7.08	0.74	0.06	0.61	0.8
0-10	7.8	7.2	<1	0.09	0.63	1.1	14	250	0.95	0.27	7.6	4.6	0.80	7.8	6.88	0.70	0.06	0.63	0.8
10-25	8.2	7.4	<1	0.08	0.56	0.4	4	150	0.59	0.06	10	0.94	0.09	7.2	6.20	0.71	0.10	0.53	1.4
25-35	8.2	7.6	<1	0.11	0.72	0.3	2	130	0.82	0.08	13	0.41	0.08	11.1	8.81	1.76	0.23	0.53	2.1
35-70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100-130	9.5	8.3	71	0.27	1.53	0.2	3	290	3.9	0.12	2.1	0.31	0.36	6.2	3.66	2.49	1.38	0.80	22.3

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.