SHALLOW LOAM OVER RED CLAY ON CALCRETE

General Description: *Sandy loam to loam over a well structured red clay with a calcrete pan shallower than 50 cm*

Landform: Gently undulating plain.

Substrate: Calcrete capped clay with hard calcified lenses (Padthaway Formation).

Vegetation: Red gum (Euc. camaldulensis) woodland.

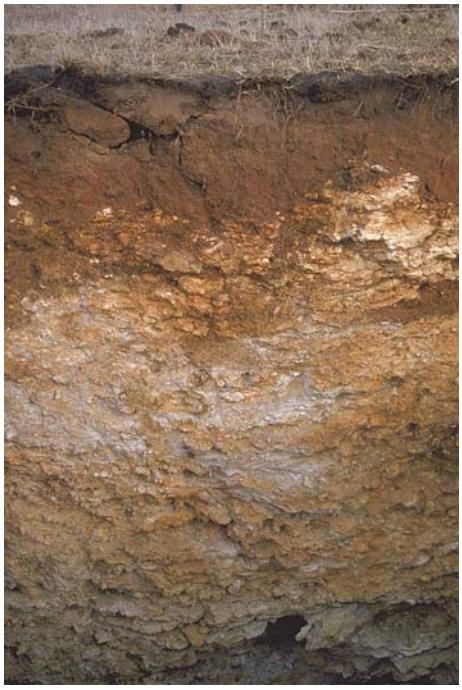
Type Site: Site No.: SE025

1:50,000 sheet:	6924-2 (Lucindale)	Hundred:	Joyce
Annual rainfall:	610 mm	Sampling date:	14/06/94
Landform:	Crest of low rise on plain, 1% slope		
Surface:	Hard setting with no stones		

Soil Description:

Depth (cm)	*Description*
0-10	Dark brown soft massive fine sandy loam. Clear to:
10-30	Brown friable single grain fine sand. Abrupt to:
30-45	Yellowish red firm fine sandy light medium clay with strong polyhedral structure. Sharp to:
45-61	Very hard laminar calcrete pan. Sharp to:
61-70	Strong brown firm medium heavy clay with strong polyhedral structure and 2-10% calcrete fragments. Sharp to:
70-200	Very hard laminar calcrete pan.

Karst depressions occur immediately below the upper calcrete layer.



Classification: Haplic, Petrocalcic, Red Chromosol; thick, non-gravelly, loamy / clayey, moderate

Summary of Properties

Drainage Well drained. The soil rarely remains wet for more than a couple of days.

Fertility Inherent fertility is moderately low, as indicated by the exchangeable cation data. Nutrient retention capacity is satisfactory in the surface layer and high in the subsoil, but the 10-30 cm layer has poor capacity due to low clay and organic matter content. The most noteworthy feature of the analysis is the very low magnesium concentration.

pH Neutral at the surface, alkaline with depth.

Rooting depth Not recorded. Estimate 45 cm, with occasional roots penetrating the calcrete.

Barriers to root growth

Physical: The calcrete severely restricts deeper root growth.

Chemical: There are no chemical barriers other than the low nutrient status / retention capacity of the subsurface layer (10-30 cm).

Water holding capacity Approximately 50 mm in the root zone.

Seedling emergence: Satisfactory.

Workability: Fair to good, depending on the degree to which the surface has compacted or set hard.

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	SO_4-S 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	7.1	6.9	0	0.11	0.53	2.7	46	266	7.1	1.6	-	-	-	-	13.6	9.19	0.84	0.09	0.56	0.7
0-10	7.0	6.6	0	0.08	0.41	3.0	6	279	4.3	2.0	-	-	-	-	11.5	8.96	0.85	0.10	0.68	0.9
10-30	7.9	7.2	0.1	0.10	0.62	0.5	2	109	3.2	0.7	-	-	-	-	3.9	2.98	0.27	0.04	0.18	1.0
30-45	7.9	7.3	0.4	0.17	0.50	1.0	2	723	3.5	1.5	-	-	-	-	25.8	18.84	1.78	0.20	2.38	0.8
45-61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
61-70	8.4	7.7	12.1	0.15	0.32	0.5	2	624	2.2	1.4	-	-	-	-	28.5	23.22	3.85	0.38	2.92	1.3
70-110	8.8	7.9	61.8	0.15	0.48	0.4	1	409	2.7	2.0	-	-	-	-	10.2	7.01	2.55	0.56	1.00	5.5
60-80 *	8.3	7.6	1.3	0.21	0.51	0.7	1	684	2.6	1.7	-	-	-	-	28.6	17.89	5.79	2.46	2.33	8.6

Note: Paddock sample bulked from 20 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

* Sample from adjacent karst depression.