

SANDY LOAM OVER RED CLAY

General Description: *Thin to medium thickness sandy loam over a coarsely structured red clay, calcareous with depth*

Landform: Flats on gently undulating plains.

Substrate: Tertiary age medium textured sediments mantled by fine carbonate.

Vegetation: Mallee



Type Site: Site No.: MM012

1:50,000 sheet:	6827-1 (Karoonda)	Hundred:	Hooper
Annual rainfall:	350 mm	Sampling date:	03/10/91
Landform:	Flat on a gently undulating plain		
Surface:	Firm with no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark brown heavy sandy loam with weak granular structure. Abrupt to:
10-13	Brown heavy sandy loam with weak platy structure. Abrupt to:
13-28	Red hard sandy medium clay with coarse blocky structure. Clear to:
28-64	Yellowish red very highly calcareous medium clay with moderate blocky structure. Diffuse to:
64-91	Yellowish red highly calcareous massive sandy medium clay with 2-10% ironstone nodules. Diffuse to:
91-115	Yellowish red light clay with 2-10% fine calcareous segregations. Diffuse to:
115-175	Yellowish red massive sandy clay loam with minor fine calcareous segregations.



Classification: Sodic, Calcic, Red Chromosol; medium, non gravelly, loamy / clayey, deep

Summary of Properties

Drainage	Well drained. Soil is rarely saturated for more than a few days.
Fertility	Inherent fertility is moderate, as indicated by the exchangeable cation data. Phosphorus and zinc are deficient at the sampling site. Organic carbon levels are satisfactory.
pH	Neutral at the surface, strongly alkaline with depth.
Rooting depth	64 cm in pit.
Barriers to root growth	
Physical:	The subsoil is slightly restrictive, and the massive sandy clay substrate (from 64 cm) is highly resistant to root penetration.
Chemical:	High pH and sodicity with moderate salinity inhibit root growth.
Water holding capacity	100 mm in the root zone.
Seedling emergence:	Satisfactory.
Workability:	Soft / firm surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	Low.

Laboratory Data

Depth cm	pH H ₂ O	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	7.4	6.9	0.3	0.23	1.32	1.3	11	380	1.8	0.21	12	9.1	0.25	10.5	8.64	1.30	0.15	0.91	1.4
0-10	6.8	6.4	<0.1	0.09	0.38	1.4	16	420	1.4	0.26	18	18	0.31	8.9	7.95	1.61	0.12	0.89	1.3
10-13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-28	8.0	7.2	0.3	0.18	0.47	0.45	3.9	230	1.7	0.24	13	5.6	0.06	16.6	10.14	5.08	0.66	0.60	4.0
28-45	9.2	7.7	12	0.23	0.86	0.32	3.1	160	2.6	0.71	13	1.3	0.07	16.9	8.58	6.72	1.90	0.40	11.2
45-64	9.5	7.9	16	0.42	2.02	0.25	2.0	130	6.4	0.37	8.5	0.74	0.06	13.7	4.46	6.46	3.68	0.35	26.9
64-91	9.4	8.0	8.0	0.86	6.75	0.18	2.8	180	12	0.36	8.0	0.47	0.04	12.3	3.12	6.05	4.51	0.44	36.7
91-115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115-175	9.4	7.8	1.2	0.67	5.28	0.07	1.1	190	7.6	1.2	4.7	0.20	0.06	11.1	1.60	5.21	4.57	0.46	41.1

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.