

SANDY LOAM OVER RED SANDY CLAY

General Description: *Sand to light sandy loam over a red sandy clay loam to sandy clay, calcareous with depth*

Landform: Dunefields of closely spaced low to moderate parallel sandhills.

Substrate: Massive medium to coarse textured sediments (Parilla Sand equivalent).

Vegetation: Mallee



Type Site: Site No.: MM142

1:50,000 sheet: 6928 - 1 (Caliph)

Hundred: Allen

Annual rainfall: 290 mm

Sampling date: 23/02/99

Landform: Dune slope

Surface: Loose with no stones

Soil Description:

Depth (cm)	Description
0-7	Brown soft single grain light sandy loam. Abrupt to:
7-14	Yellowish red soft single grain light sandy loam. Sharp to:
14-25	Red very hard sandy medium clay with coarse columnar structure. Clear to:
25-70	Orange hard massive very highly calcareous fine sandy light clay. Gradual to:
70-110	Reddish yellow friable massive highly calcareous sandy light clay with 2-10% calcrete fragments (20-60 mm). Gradual to:
110-165	Reddish yellow friable massive moderately calcareous light sandy clay loam.



Classification: Calcic, Mesonatric, Red Sodosol; medium, non-gravelly, loamy / clayey, deep

Summary of Properties

Drainage	Moderately well drained. Water perches on the dense clayey subsoil for up to a week following heavy or prolonged rainfall.
Fertility	Inherent fertility is low, as indicated by the exchangeable cation data. Phosphorus deficiencies are usual (low at sampling site). Nitrogen levels depend on cropping history and legume status of pastures. Zinc and copper are occasionally deficient (zinc levels are low at sampling site). Organic carbon levels are also sub-optimal.
pH	Neutral at the surface, strongly alkaline with depth.
Rooting depth	Not recorded. Estimate 25 cm in pit, with some roots to 70 cm.
Barriers to root growth	
Physical:	The dense clayey subsoil restricts roots to surfaces of aggregates.
Chemical:	High pH and sodicity from 25 cm impede deeper root growth.
Water holding capacity	Approximately 45 mm in potential root zone.
Seedling emergence:	Satisfactory.
Workability:	Soft to loose surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	Moderately 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	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	6.9	6.5	-	0.07	1.0	0.54	11	323	-	0.8	0.2	-	4.3	0.2	4.4	2.6	0.8	< 0.1	0.45	2.2
0-7	7.4	7.4	< 0.1	0.06	0.9	0.40	7	225	-	0.8	0.3	-	2.9	0.2	4.5	3.0	0.82	< 0.1	0.52	2.2
7-14	7.0	6.7	< 0.1	0.04	0.5	0.30	2	91	-	0.5	0.6	-	1.1	0.2	3.2	1.8	0.63	< 0.1	0.18	3.1
14-25	8.7	7.7	0.3	0.14	1.3	0.27	1	93	-	3.0	0.2	-	0.2	0.1	14.0	4.2	5.6	2.2	0.32	15.7
25-70	9.3	8.2	15	0.58	5.5	0.11	1	115	-	8.2	0.8	-	0.3	0.1	8.4	2.8	4.8	2.7	0.32	32.1
70-110	9.1	8.2	5.9	0.55	3.6	0.07	2	124	-	6.6	0.5	-	0.5	0.2	6.5	1.8	3.7	1.9	0.36	29.2
110-165	9.2	8.3	1.4	0.58	8.1	0.05	1	162	-	7.6	0.3	-	0.2	0.1	5.7	1.4	3.1	3.1	0.38	54.4

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.