

CALCAREOUS SANDY LOAM OVER CLAYEY SUBSTRATE

General Description: *Calcareous sandy loam grading to a very highly calcareous sandy clay loam with abundant rubble, over heavy clay at depth*

Landform: Flat to gently undulating plain with occasional low sandy and stony rises.

Substrate: Coarsely structured heavy clay (Blanchetown Clay equivalent).

Vegetation: Mallee



Type Site: Site No.: MM133

1:50,000 sheet: 7027-3 (Lameroo)

Hundred: Parilla

Annual rainfall: 360 mm

Sampling date: 23/05/96

Landform: Low rise

Surface: Firm with 10-20% calcrete stone (20-200 mm)

Soil Description:

Depth (cm)	Description
0-15	Brown soft platy highly calcareous sandy loam. Clear to:
15-30	Reddish yellow soft massive very highly calcareous light sandy clay loam with 20-50% carbonate fragments (6-20 mm) and 20-50% fine carbonate segregations. Clear to:
30-60	Reddish yellow friable massive very highly calcareous clay loam with more than 50% fine carbonate segregations. Gradual to:
60-95	Reddish yellow friable very highly calcareous light medium clay with more than 50% fine carbonate segregations. Diffuse to:
95-150	Yellowish red friable medium clay with coarse angular blocky structure and 20-50% fine carbonate segregations. Gradual to:
150-190	Yellowish red hard medium heavy clay with coarse prismatic breaking to angular blocky structure.



Classification: Epihypersodic, Regolithic, Supracalcic Calcarosol; medium, gravelly, loamy/clayey, moderate

Summary of Properties

Drainage	Well drained. Soil never saturated for more than a few days.
Fertility	Inherent fertility is moderate, as indicated by the exchangeable cation data. Regular phosphorus applications are essential. Nitrogen deficiency is common. Zinc and copper deficiencies often show up, a problem amplified by the carbonate content of the soil. At the sampling site, copper and sulphur appear to be deficient. Organic carbon levels are adequate.
pH	Alkaline at the surface, strongly alkaline with depth.
Rooting depth	95 cm in pit, but few roots below 60 cm.
Barriers to root growth	
Physical:	No physical barriers, although rubble reduces water storage capacity.
Chemical:	High pH and sodicity from 30 cm, and high boron from 60 cm restrict deep root growth.
Water holding capacity	Approximately 75 mm in the root zone.
Seedling emergence:	Satisfactory.
Workability:	Soft to firm 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	8.6	8.0	5.0	0.12	0.74	1.0	35	460	4	1.9	0.08	7	3.48	0.70	9.9	8.26	1.02	0.11	0.97	1.1
0-15	8.6	8.0	4.2	0.10	0.79	1.1	33	441	4	1.7	-	-	-	-	9.4	9.12	1.06	0.09	0.97	0.9
15-30	8.7	8.1	25.3	0.14	0.72	0.7	5	273	4	2.7	-	-	-	-	12.8	10.11	2.70	0.23	0.60	1.8
30-60	9.5	8.5	34.0	0.68	5.39	0.3	<4	248	43	8.8	-	-	-	-	11.3	4.15	6.14	3.76	0.59	33.3
60-95	9.9	8.9	40.6	1.14	6.53	0.1	<4	239	117	23.1	-	-	-	-	12.0	1.57	6.16	8.09	1.23	67.5
95-150	9.6	8.7	24.7	1.47	8.03	0.2	<4	600	167	30.6	-	-	-	-	17.0	1.65	7.41	9.70	1.77	56.9
150-190	8.7	8.1	0.1	1.60	7.26	0.1	<4	750	201	29.4	-	-	-	-	24.9	0.87	9.55	12.58	2.17	50.5

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.