

SHALLOW SAND OVER SANDY CLAY ON CALCRETE

General Description: *Medium thickness sand over a thin brown sandy clay overlying calcrete*

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

Substrate: Coarse grained lagoonal sediments (Padthaway Formation).

Vegetation: Mallee.



Type Site: Site No.: MM091
1:50,000 sheet: 6826-3 (Woods Well) Hundred: Strawbridge
Annual rainfall: 460 mm Sampling date: 1992
Landform: Low rise on a very gently undulating plain
Surface: Soft with minor calcrete stone (60-200 mm)

Soil Description:

Depth (cm)	Description
0-10	Very dark greyish brown loose loamy sand. Abrupt to:
10-15	Pale brown loose sand. Sharp to:
15-20	Yellowish brown friable sandy clay with coarse columnar structure. Abrupt to:
20-40	Weakly cemented rubbly calcrete pan. Clear to:
40-65	Yellow hard massive very highly calcareous sandy clay loam. Gradual to:
65-100	Brownish yellow and light yellowish brown friable massive sandy loam. Diffuse to:
100-150	Light yellowish brown and yellowish brown massive calcareous clayey sand. Diffuse to:
150-200	Light yellowish brown and yellowish brown massive calcareous clayey sand.



Classification: Haplic, Lithocalcic, Brown Chromosol; medium, non-gravelly, sandy / clayey, moderate

Summary of Properties

Drainage	Rapidly to well drained. Soil rarely remains saturated for more than a few hours.
Fertility	Inherent fertility is low, as indicated by the exchangeable cation data. Phosphorus applications are required regularly. Nitrogen content depends on pasture legume condition. Occasional deficiencies of copper and zinc are likely, and cereals and lupins may require manganese. Organic carbon levels are satisfactory at the sampling site.
pH	Neutral at the surface, alkaline with depth.
Rooting depth	40 cm in pit.
Barriers to root growth	
Physical:	The calcrete restricts root development.
Chemical:	There are no chemical barriers, but relatively low nutrient retention capacity limits root growth.
Water holding capacity	30 mm in root zone.
Seedling emergence:	Reduced by water repellence in dry years.
Workability:	Loose / soft surface is easily worked, but stones interfere with and abrade equipment.
Erosion Potential	
Water:	Low.
Wind:	Moderately low to moderate.

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	7.2	6.9	<1	0.09	0.50	1.3	9.1	280	0.7	-	-	-	-	6.1	8.57	0.76	0.08	0.26	1.3
0-10	7.4	7.0	<1	0.08	0.45	1.5	8.6	370	0.8	-	-	-	-	6.0	6.09	0.65	0.04	0.27	0.7
10-15	7.4	7.0	<1	0.06	0.37	0.63	5.1	100	0.3	-	-	-	-	3.9	4.95	0.47	0.05	0.15	1.3
15-20	7.8	7.4	1	0.14	0.49	0.59	4.9	230	0.9	-	-	-	-	12.2	10.86	1.45	0.18	0.53	1.5
20-40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40-65	8.8	8.0	31	0.14	0.54	0.15	3.7	150	0.8	-	-	-	-	4.3	5.85	1.07	0.16	0.27	3.7
65-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100-150	9.0	8.3	4	0.21	1.28	<0.01	<2.0	130	0.9	-	-	-	-	4.0	4.27	1.86	0.42	0.24	10.5
150-200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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.