

SANDY LOAM OVER POORLY STRUCTURED BROWN CLAY

General Description: *Firm sandy loam over a coarsely structured dispersive brown sandy clay, calcareous with depth*

Landform: Gently undulating plain with limited low to moderate sandhills.

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

Vegetation: Mallee



Type Site: Site No.: MM124

1:50,000 sheet: 6927-2 (Parrakie)

Hundred: Cotton

Annual rainfall: 390 mm

Sampling date: 23/05/96

Landform: Lower dune slope

Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
0-16	Brown firm massive sandy loam. Abrupt to:
16-30	Pale brown soft loamy sand. Sharp to:
30-55	Light yellowish brown and orange very hard sandy light clay with coarse columnar structure. Clear to:
55-85	Reddish yellow very hard, very highly calcareous light medium clay with moderate subangular blocky structure and 20-50% fine carbonate segregations. Clear to:
85-125	Yellowish red and light brownish grey very hard very highly calcareous heavy clay with strong coarse angular blocky structure and 20-50% fine carbonate. Diffuse to:
125-190	Yellowish red and light brownish grey very hard moderately calcareous heavy clay with strong coarse prismatic structure.



Classification: Hypercalcic, Mottled-Mesonatric, Yellow Sodosol; medium, non-gravelly, loamy/clayey, moderate

Summary of Properties

Drainage	Moderately well to imperfectly drained. Water perches on the clayey subsoil - saturation may persist for a week or more following heavy or prolonged rainfall.
Fertility	Inherent fertility is moderately low as indicated by the exchangeable cation data. Deficiencies of phosphorus, nitrogen, zinc and copper can be expected - the latter two are marginally deficient at the sampling site. Organic carbon level is adequate at sampling site.
pH	Neutral at the surface, strongly alkaline at depth.
Rooting depth	85 cm in pit, but few roots below 30 cm.
Barriers to root growth	
Physical:	The dense dispersive subsoil restricts root growth and reduces water use efficiency.
Chemical:	High pH and sodicity from 55 cm impede root growth.
Water holding capacity	Approximately 50 mm in root zone.
Seedling emergence:	Slight limitation due to poor surface structure and waterlogging in wet seasons.
Workability:	Fair. Restricted moisture range over which soil can be safely 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	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	7.4	7.0	<0.1	0.10	0.97	1.1	23	376	4	1.4	0.19	12	4.31	0.44	9.4	6.43	1.42	0.27	1.12	2.9
0-16	7.7	7.0	<0.1	0.05	0.37	0.9	16	315	3	1.2	-	-	-	-	8.2	5.87	1.06	0.16	0.74	2.0
16-30	7.8	7.1	<0.1	0.02	0.12	0.1	5	82	1	0.3	-	-	-	-	2.1	1.38	0.25	0.15	0.11	7.3
30-55	9.2	8.4	0.3	0.22	0.58	0.1	<4	177	2	2.7	-	-	-	-	13.7	5.42	5.47	2.19	0.38	16.0
55-85	9.9	8.7	23.4	0.53	0.95	0.2	<4	241	13	10.2	-	-	-	-	14.6	2.44	7.97	5.44	0.54	37.2
85-125	9.9	8.9	25.0	0.76	1.80	<0.1	<4	312	28	11.0	-	-	-	-	17.5	1.49	9.36	8.41	0.86	48.0
125-190	9.5	8.9	0.7	1.01	3.00	<0.1	<4	388	94	16.7	-	-	-	-	22.8	1.18	10.47	9.19	1.13	40.3

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.