

SANDY CLAY LOAM OVER DISPERSIVE RED CLAY

General Description: *Sandy clay loam abruptly overlying a coarsely structured dispersive red clay, calcareous with depth*

Landform: Flats between gently undulating sandhills

Substrate: Fine and coarse grained Tertiary sediments.

Vegetation: Mallee



Type Site:	Site No.:	MM031	1:50,000 mapsheet:	7027-4 (Karte)
	Hundred:	Kingsford	Easting:	469050
	Section:	2	Northing:	6116900
	Sampling date:	15/11/1991	Annual rainfall:	315 mm average

Flat, with firm surface and no stones

Soil Description:

Depth (cm)	Description
0-9	Reddish brown firm fine sandy clay loam. Abrupt to:
9-22	Reddish brown hard medium clay with coarse angular blocky structure. Clear to:
22-57	Yellowish red highly calcareous medium clay with coarse angular blocky structure. Abrupt to:
57-76	Orange moderately calcareous massive sandy clay loam. Clear to:
76-96	Orange with red and grey mottles light sandy clay loam, with minor fine carbonate segregations. Clear to:
96-137	Orange with red and grey mottles light sandy clay loam. Diffuse to:
137-167	Orange with red and grey mottles sandy loam. Gradual to:
167-195	Orange and grey loamy sand.



Classification: Calcic, Subnatric, Red Sodosol; thin, non-gravelly, clay loamy / clayey, moderate



Summary of Properties

- Drainage:** Moderately well drained. Water perches on the clayey subsoil for a week or so at a time following heavy or prolonged rain.
- Fertility:** Inherent fertility is high as indicated by the exchangeable cation data. However, phosphorus, nitrogen and zinc deficiencies are likely. Organic carbon levels are less than the 1.3% which is achievable in this environment.
- pH:** Neutral at the surface, strongly alkaline with depth.
- Rooting depth:** 57 cm in pit.
- Barriers to root growth:**
- Physical:** The hard dispersive clayey subsoil restricts uniform root growth. The hard, massive sandy substrate (from 57 cm) further impedes growth.
 - Chemical:** High pH, sodicity and boron levels all contribute to poor root growth conditions at moderate depth.
- Waterholding capacity:** 85 mm in rootzone.
- Seedling emergence:** Limitation due to hard setting and dispersive surface in places.
- Workability:** Fair due to tendency to hard setting - limited opportunities for cultivation without damaging the soil.
- 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	8.4	7.1	3.0	0.22	1.03	0.91	12	570	3.2	0.40	7.3	5.4	0.21	29.7	17.26	7.69	0.88	1.62	3.0
0-9	7.2	6.6	0.3	0.15	0.99	1.0	9.3	570	2.8	0.54	15	11	0.62	21.9	11.87	7.27	0.87	1.58	4.0
9-22	8.8	7.2	1.3	0.37	1.92	0.58	2.4	270	6.5	0.44	14	2.5	0.12	30.7	12.24	11.83	3.30	0.83	10.8
22-57	9.1	8.0	7.5	0.80	4.70	0.42	1.8	340	19	0.68	13	0.86	0.18	29.3	9.05	12.78	6.64	0.99	22.7
57-76	9.3	7.8	3.0	0.65	4.8	0.17	0.9	210	15	0.41	7.6	0.26	0.02	14.5	3.67	6.19	3.89	0.59	26.8
76-96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
96-137	5.3	4.7	0.1	0.44	5.3	0.14	0.9	86	4.4	0.29	15	0.03	0.01	6.4	0.85	3.02	2.09	0.25	32.7
137-195	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- 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.

Further information: [DEWNR Soil and Land Program](#)

