

## 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 sheet: 7027-4 (Karte)

Hundred: Kingsford

Annual rainfall: 340 mm

Sampling date: 15/11/91

Landform: Flat

Surface: Firm with 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

<b>Drainage</b>	Moderately well drained. Water perches on the clayey subsoil for a week or so at a time following heavy or prolonged rain.
<b>Fertility</b>	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.
<b>pH</b>	Neutral at the surface, strongly alkaline with depth.
<b>Rooting depth</b>	57 cm in pit.
<b>Barriers to root growth</b>	
<b>Physical:</b>	The hard dispersive clayey subsoil restricts uniform root growth. The hard, massive sandy substrate (from 57 cm) further impedes growth.
<b>Chemical:</b>	High pH, sodicity and boron levels all contribute to poor root growth conditions at moderate depth.
<b>Water holding capacity</b>	85 mm in root zone.
<b>Seedling emergence:</b>	Limitation due to hard setting and dispersive surface in places.
<b>Workability:</b>	Fair due to tendency to hard setting - limited opportunities for cultivation without damaging the soil.

## Erosion Potential

<b>Water:</b>	Low.
<b>Wind:</b>	Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	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.