

SANDY CLAY LOAM OVER DISPERSIVE BROWN CLAY

General Description: *Sandy loam to clay loam over a brown coarsely structured and dispersive brown clay, calcareous with depth*

Landform: Flat to gently undulating plains.

Substrate: Calcreted clayey sediment (Padthaway Formation).

Vegetation: Mallee



Type Site:	Site No.:	MM080	1:50,000 mapsheet:	6826-1 (Coonalpyn)
	Hundred:	Coneybeer	Easting:	406400
	Section:	6	Northing:	6046800
	Sampling date:	08/03/1993	Annual rainfall:	455 mm average

Flat, with hard cracking surface and no stone.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Very dark greyish brown hard moderately calcareous sandy clay loam with coarse granular structure. Abrupt to:
10-22	Brown slightly calcareous very hard heavy clay with coarse angular blocky structure. Clear to:
22-40	Brown highly calcareous hard medium clay with coarse angular blocky structure. Clear to:
40-65	Light brown very highly calcareous hard sandy clay with weak blocky structure. Diffuse to:
65-100	Pale olive very highly calcareous hard medium clay with weak blocky structure. Diffuse to:
100-170	Light olive hard grey sandy medium clay with moderate coarse blocky structure and more than 50% fine carbonate. Diffuse to:
170-190	Olive grey hard medium clay with strong coarse angular blocky structure.



Classification: Hypercalcic, Mesonatric, Brown Sodosol; medium, non-gravelly, clay loamy/clayey, moderate



Summary of Properties

- Drainage:** Imperfectly to poorly drained. Soil may remain saturated for several months in wet years. Water perches on the clayey subsoil, and is held up by the clayey substrate.
- Fertility:** Inherent fertility is moderate to high, as indicated by the exchangeable cation data. Although susceptible to phosphorus, nitrogen, zinc and copper deficiencies, levels of all of these are in good supply at the sampling site. Organic carbon concentrations are above average.
- pH:** Alkaline at the surface, strongly alkaline at shallow depth.
- Rooting depth:** 40 cm in pit.
- Barriers to root growth:**
- Physical:** The dense sodic clay subsoil prevents uniform root distribution.
 - Chemical:** High pH and sodicity from 22 cm, and moderate salinity from 65 cm impede root growth.
- Waterholding capacity:** 60 mm in rootzone.
- Seedling emergence:** Moderate - heavy surface tends to seal over when wet.
- Workability:** Poor, due to dispersibility. Soil puddles when wet and shatters when dry.
- 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	8.1	7.3	2	0.16	1.05	1.4	37	520	2.7	0.38	20	1.9	0.59	21.9	11.00	6.01	1.28	1.48	5.8
0-10	8.2	7.3	2	0.16	1.08	1.2	42	470	2.4	0.28	23	1.6	0.72	19.3	9.44	5.58	1.35	1.29	7.0
10-22	8.8	7.7	<1	0.29	1.09	0.5	6	820	5.8	0.13	20	0.35	0.13	32.5	9.52	14.53	5.38	2.77	16.6
22-40	9.3	8.5	12	0.99	3.58	0.2	3	870	<0.4	0.12	11	1.1	0.1	29.5	5.91	14.25	8.50	2.83	28.8
40-65	9.4	8.5	47	1.21	5.91	0.2	<2	570	5.3	0.2	8.2	1.2	0.07	18.5	3.76	8.41	6.34	1.57	34.3
65-100	9.3	8.5	41	1.45	9.34	0.1	<2	560	4	0.25	5.8	0.8	0.08	17.0	3.59	7.53	5.88	1.47	34.6
100-170	9.1	8.3	10	1.56	11.35	<0.1	<2	570	4.3	0.25	5.1	0.24	0.06	18.7	3.12	7.90	6.16	1.60	32.9
170-190	8.5	8.0	3	1.90	12.09	<0.1	<2	760	6.6	0.4	7.2	0.17	0.08	24.4	3.14	10.29	8.43	2.20	34.6

- 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](#)

