

SANDY LOAM OVER POORLY STRUCTURED RED CLAY

General Description: *Sandy loam over coarsely structured red or brown clay, calcareous with depth*

Landform: Very gently undulating plains.

Substrate: Pleistocene / Tertiary age clay, often thin over sandy clay to clayey sand.

Vegetation: Mallee.



Type Site: Site No.: MM001

1:50,000 sheet: 6928-3 (Halidon)

Hundred: McPherson

Annual rainfall: 310 mm

Sampling date: 03/09/91

Landform: Flat

Surface: Soft with no stones

Soil Description:

Depth (cm)	Description
0-11	Reddish brown sandy loam. Abrupt to:
11-25	Yellowish red hard sandy clay with coarse columnar structure. Clear to:
25-50	Orange very highly calcareous medium clay with moderate subangular blocky structure. Diffuse to:
50-80	Yellowish red and brown medium clay with weak coarse subangular blocky structure. Diffuse to:
80-100	Yellowish red medium clay with weak coarse subangular blocky structure. Diffuse to:
100-150	Pink and brown massive sandy clay. Diffuse to:
150-200	Brownish yellow massive clayey sand.



Classification: Calcic, Hypernatric, Red Sodosol; medium, non-gravelly, loamy / clayey, moderate

Summary of Properties

Drainage	Moderately well drained. Water may perch on the subsoil clay for a few days to a week.
Fertility	Inherent fertility is moderate, as indicated by the exchangeable cation data. At sampling site, phosphorus levels are low, and zinc and copper are marginal. Organic carbon levels are also low.
pH	Neutral at the surface, strongly alkaline in the subsoil, and strongly acidic in the substrate.
Rooting depth	100 cm in pit, but few roots below 50 cm.
Barriers to root growth	
Physical:	Poorly structured dispersive subsoil clay prevents optimum root distribution.
Chemical:	High pH, sodicity, salinity and boron from 25 cm adversely affect root growth.
Water holding capacity	75 mm in root zone.
Seedling emergence:	Satisfactory.
Workability:	Soft to firm surface - easily worked.
Erosion Potential	
Water:	Low.
Wind:	Moderately 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	7.5	6.6	0.7	0.12	0.96	0.71	10	300	1	0.37	9.4	7.39	0.36	8.5	4.46	2.93	0.30	0.70	3.5
0-11	7.3	6.7	1.0	0.06	0.46	0.67	14	270	<0.5	0.18	5.5	8.81	0.55	5.0	3.74	2.07	0.17	0.58	3.4
11-25	9.2	7.8	3.6	0.22	0.88	0.54	2.3	210	4.5	0.38	13.9	1.96	0.33	18.7	8.67	9.91	2.26	0.62	12.1
25-50	9.4	8.3	12.8	0.63	4.28	0.59	6	100	15	0.99	13.9	2.06	0.32	21.7	6.49	10.63	5.46	0.34	25.2
50-80	8.4	7.8	1.2	1.12	9.5	0.28	2	160	28	0.88	12.0	0.13	0.44	24.7	3.87	12.58	7.99	0.50	32.3
80-100	4.9	4.4	0.7	1.03	12.1	0.24	2.1	200	6.6	0.77	59.0	0.06	0.52	23.3	2.55	10.74	9.65	0.72	41.4
100-150	4.6	3.9	0.2	0.69	9.12	0.17	2.1	160	4.3	0.46	44.4	0.06	0.45	15.0	1.22	6.43	4.53	0.41	30.2
150-200	6.1?	3.8	0.2	0.67	10.1	0.12	1.5	120	4.1	0.43	31.9	0.08	0.83	10.3	0.71	4.50	3.80	0.32	36.9

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.