

GRADATIONAL RED CLAY LOAM

General Description: *Friable clay loam grading to a well structured red clay, calcareous with depth*

Landform: Undulating plain.

Substrate: Calcreted calcarenite (Bridgewater Formation)

Vegetation: Mallee.



Type Site: Site No.: MM076

1:50,000 sheet: 6826-1 (Coonalpyn)

Hundred: Kirkpatrick

Annual rainfall: 425 mm

Sampling date: 12/10/92

Landform: Flat

Surface: Firm with no stones

Soil Description:

Depth (cm)	Description
0-9	Dark reddish brown friable fine sandy clay loam with strong granular structure. Clear to:
9-50	Red firm light medium clay with moderate angular blocky structure. Gradual to:
50-80	Red friable sandy medium clay with weak angular blocky structure. Gradual to:
80-105	Yellowish red friable massive sandy medium clay. Diffuse to:
105-120	Yellowish red, pale brown and yellowish brown friable massive sandy clay. Abrupt to:
120-160	Laminar calcrete. Clear to:
160-190	Reddish yellow massive very highly calcareous light sandy clay loam with 20-50% calcrete nodules (more than 60 mm).



Classification: Sodic, Petrocalcic, Red Dermosol; thin, non-gravelly, clay loamy / clayey, deep

Summary of Properties

- Drainage** Moderately well drained. Soil may remain saturated for up to week following heavy or prolonged rainfall.
- Fertility** Inherent fertility is high as indicated by the exchangeable cation data. Phosphorus and nitrogen applications are essential. Copper and zinc may be required from time to time. Organic carbon levels and nutrient retention capacity are high.
- pH** Slightly acidic at the surface, alkaline at depth.
- Rooting depth** 100 cm in pit.
- Barriers to root growth**
- Physical:** Calcrete prevents deeper root penetration.
 - Chemical:** No chemical barriers.
- Water holding capacity** 150 mm in root zone.
- Seedling emergence:** Slight limitation due to clayey surface.
- Workability:** Firm clayey surface can puddle if worked too wet and shatter if worked too 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	6.6	6.3	2	0.11	0.48	1.9	14	810	2.1	-	-	-	-	18.1	14.67	2.22	0.26	2.35	1.4
0-9	6.0	5.4	2	0.08	0.23	2.4	12	1300	2.8	-	-	-	-	27.4	17.57	4.40	0.43	4.05	1.6
9-50	7.6	6.9	2	0.05	0.14	0.41	<2.0	520	3.8	-	-	-	-	29.4	18.79	5.88	0.69	1.31	2.3
50-80	7.8	7.0	2	0.06	0.20	0.13	<2.0	260	3.7	-	-	-	-	25.8	16.89	5.76	1.21	0.64	4.7
80-105	7.9	6.9	1	0.06	0.31	0.05	<2.0	160	2.1	-	-	-	-	14.1	9.64	3.15	0.88	0.30	6.2
105-120	8.1	7.6	4	0.14	0.36	0.04	<2.0	180	1.6	-	-	-	-	13.5	9.56	2.80	0.82	0.31	6.1
120-160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160-190	8.9	8.0	50	0.08	0.26	0.05	<2.0	130	0.4	-	-	-	-	2.3	2.67	0.62	0.31	0.10	13.5

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.