

SANDY LOAM OVER DISPERSIVE RED CLAY

General Description: *Hard sandy loam over a coarsely structured dispersive red clay, calcareous with depth*

Landform: Lower slopes and outwash fans of undulating rises and low hills.

Substrate: Fine to medium grained outwash sediment (Pooraka Formation), mantled by secondary carbonate

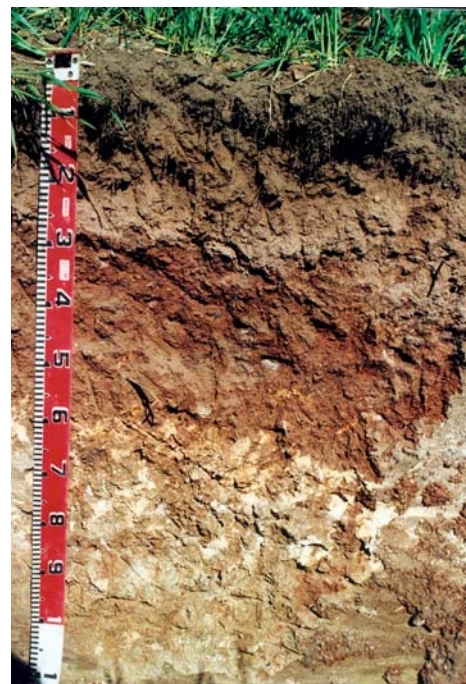
Vegetation:



Type Site: Site No.: EE215
1:50,000 sheet: 6230-1 (Cowell) Hundred: Miltalie
Annual rainfall: 400 mm Sampling date: 18/09/01
Landform: Lower slope of undulating low hills, 2% slope
Surface: Firm with slight crust, no stones

Soil Description:

Depth (cm)	Description
0-10	Dark reddish brown weakly granular coarse sandy loam with 20% quartz gravel to 10 mm. Clear to:
10-32	Dark red slightly dispersive medium clay with strong coarse subangular blocky structure and 5% quartz gravel (2-6 mm). Gradual to:
32-50	Red very highly calcareous light medium clay with moderate coarse subangular blocky structure. Gradual to:
50-95	Yellowish red very highly calcareous medium clay with moderate coarse subangular blocky structure and 5% quartz gravel (2-6 mm). Gradual to:
95-140	Red slight calcareous massive coarse sandy light clay with 10% quartz gravel (2-6 mm).



Classification: Hypercalcic, Hypernatric, Red Sodosol; medium, gravelly, loamy / clayey, deep

Summary of Properties

- Drainage:** Moderately well drained. Soil is unlikely to remain wet for more than a week following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is high, as indicated by the exchangeable cation data. At the pit site, concentrations of all tested elements are satisfactory. Organic carbon levels are adequate for this environment.
- pH:** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** 95 cm in pit, but few roots below 50 cm.
- Barriers to root growth:**
- Physical:** The coarsely structured and slightly dispersive subsoil restricts root growth to some extent.
- Chemical:** High pH / sodicity and salinity from 32 cm impede strong root growth.
- Water holding capacity:** Approximately 75 mm in the potential root zone.
- Seedling emergence:** Fair due to the tendency of the surface to seal over and set hard.
- Workability:** Fair. The surface tends to puddle if worked too wet, and shatter if worked too dry. Gritty surface soil may abrade implements.

Erosion Potential

- Water:** Moderately low. Run on water from upslope may cause rilling of unprotected surfaces.
- Wind:** Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	Org.C %	NO ₃ mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum of cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Zn	Mn		Ca	Mg	Na	K	
0-10	8.3	7.3	nd	0.10	1.25	9	29	300	3.9	1.2	0.48	27.0	1.32	23.2	7.92	4.92	1.71	0.53	0.76	6.7
10-32	9.0	7.9	nd	0.29	0.42	2	3	363	11.1	2.7	0.59	15.6	0.18	9.08	19.28	5.56	7.46	5.33	0.93	27.6
32-50	9.7	8.9	nd	1.10	0.28	2	4	459	103	6.0	0.99	13.9	0.19	3.44	30.43	6.84	10.9	11.5	1.13	37.9
50-95	9.7	8.9	nd	1.24	0.13	2	2	430	158	7.0	0.58	11.0	0.10	1.67	27.88	6.25	8.79	11.8	1.06	42.3
95-140	9.7	8.8	nd	1.08	0.08	3	1	337	146	7.6	0.41	8.1	0.15	1.05	21.75	4.70	6.53	9.65	0.87	44.4

Note: Sum of cations in neutral to alkaline soils is an approximation of cation exchange capacity (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 sum of cations.